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ABSTRACT

The result of a detailed 2-year space needs analysis of the University of Idaho Library, this study focuses on the three primary space requirement elements of users, collection components, and library staff and support services. A summary of issues and recommendations is presented, and the following specific subjects are considered in detail: (1) library organization, (2) existing facilities and site, (3) current issues and trends in library operations, (4) collections, (5) reader and library staff space, and (6) options for meeting the library's space needs. Appendices contain the University of Idaho Long-Range Plan, a square footage analysis of selected areas of the University of Idaho Library seating, and a listing of members of the Western Library Network. Footnotes, a bibliography, 25 tables, and 26 illustrations, including library plans, supplement the text. (KM)

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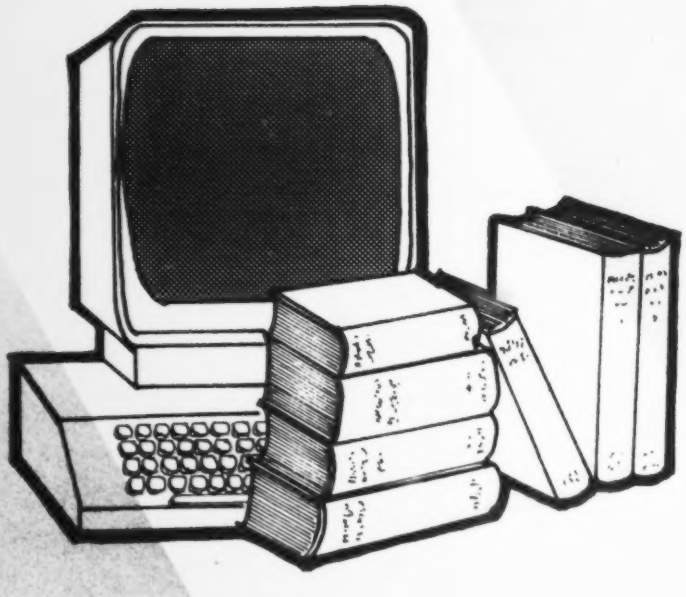

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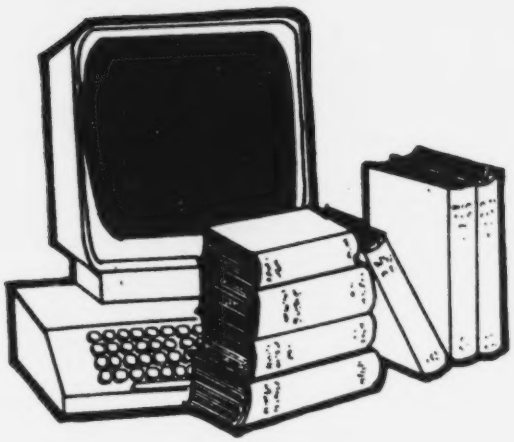

Facility Study

August, 1986

University of Idaho
Moscow, Idaho

LIBRARY

FACILITY STUDY

August, 1986

Prepared by

DEPARTMENT OF FACILITY PLANNING

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Preface

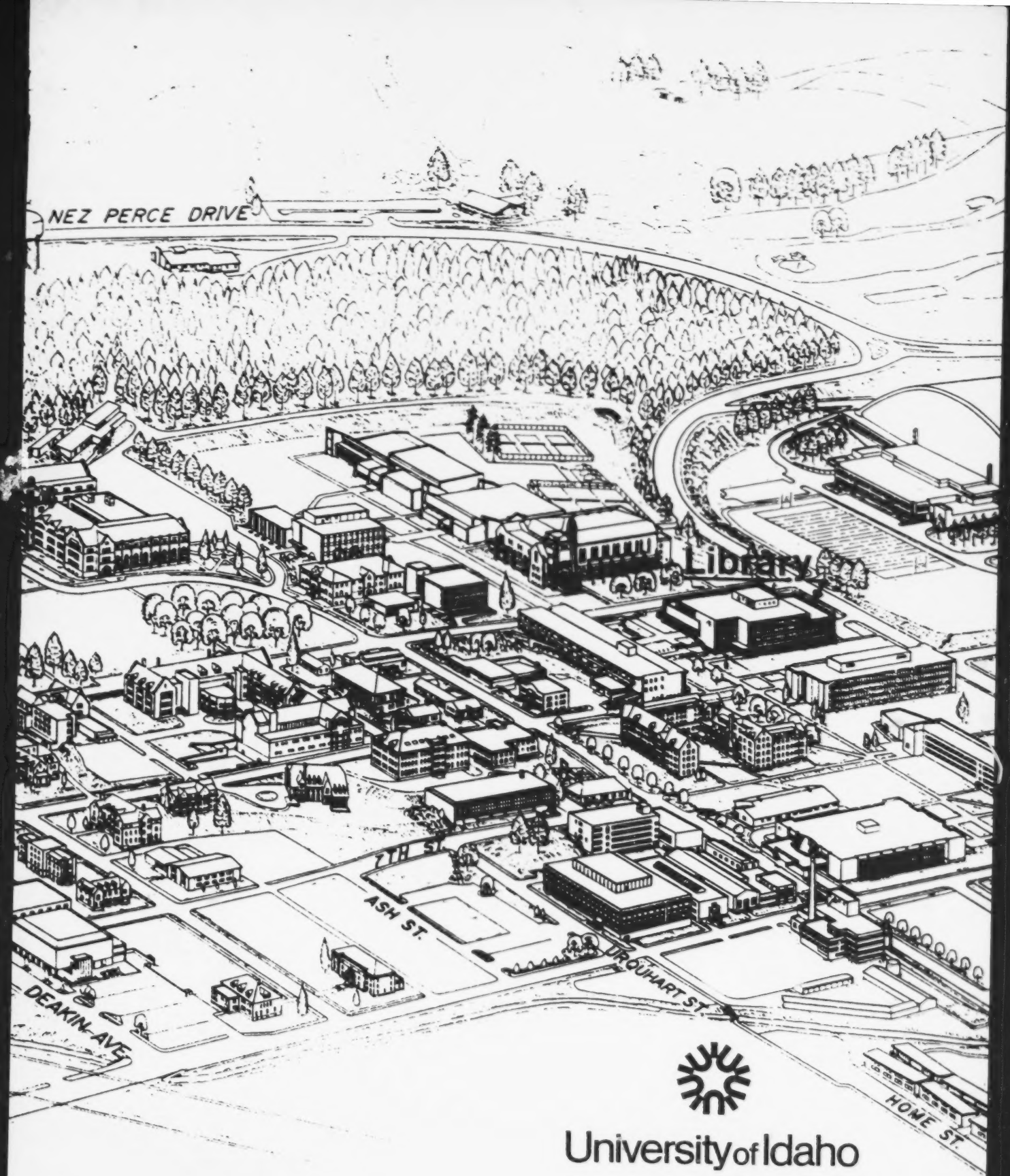

Fig. 1 . Vicinity map

Preface

In 1979 the University of Idaho created the Department of Facility Planning. One of the major responsibilities of the department is to ensure the orderly and detailed analyses of major facility needs for the Moscow campus. Before submitting any major facility request to the Board of Regents and the State for approval and funding, the university completes a thorough review of the need, including the evaluation of alternative solutions. The facility study of the university's main library represents the fourth such detailed space needs analysis. Previous studies were completed for East End Addition/Memorial Gym Remodel, the Agricultural Engineering Building, and the Life Sciences Building Remodel and Addition.

Facility Study Process

The first step in the facility study process is establishing a space needs study committee of representatives of the programs and facilities under consideration. Led by the Facility Planning staff the committee 1) completes a thorough review of the existing program and activities; 2) assesses the quality and utilization of the existing space occupied by the program; 3) determines whether a space needs problem currently exists; 4) assesses the availability of other existing space on campus; 5) projects the future direction and level of demand for programs and activities; and 6) determines the magnitude of future space needs. Typically, space needs are projected for a 20-25 year planning period.

In the final stage of the facility study development process, the university administration reviews the needs analysis and selects the most feasible solution. In arriving at a solution, a balance must be achieved between demonstrated space needs and the perceived capability of the state and university to finance these needs.

The most difficult phase of the facility study is the development of options that address the space needs problem. In the library study, the development of alternatives was particularly challenging. Several issues were explored. For example, electronic communications and information management technologies have great potential for helping solve some of the library's space needs, particularly as they relate to providing user access to collections. The long-standing tradition of buying new books, periodicals, etc., and placing them in easily accessible stacks is changing because of the exponential growth of knowledge and the high cost of providing space to house the collection. Library management is discovering how to utilize these emerging technologies to provide improved access to a wider variety of materials. Greater use of technology and a need to expand on- and off-campus services to meet the needs of the library's growing and changing clientele suggests some

internal restructuring of library programs. The real challenge, however, is to project technological developments into the future and anticipate their potential application to specific library management needs. The space needs study committee and staff members visited campuses where innovative solutions have been implemented. Staff attended national conferences where library space planning was on the agenda and reviewed current literature on the subject.

Elements and Organization of the Library Study

More than two years have been spent studying the needs and evaluating alternative solutions to the university's general library space problems. This report focuses on three primary elements of the space need: space requirements for users, space requirements to house the various components of the collection, and space requirements for library staff and other library support services.

Chapter 1 of the report provides a background profile of the library, summarizes the problem, introduces major issues, presents options, describes alternative solutions, and recommends a course of action designed to meet the library's space needs for the next 20-25 years. In the sections of the report that follow, more detailed information is provided. Chapter 2 describes the library and how it functions. Chapter 3 summarizes and evaluates the library's current space situa-tion, and includes an analysis of architectural and site problems. Chapter 4 explores the trends and issues that will affect how the future library will serve its users. Chapter 5 focuses specifically on managing the collections, including strategies to provide access to the wide range to items within the library collection. Chapter 6 discusses the user space needs and addresses staff and other support service space needs of the library. The last section, Chapter 7, reviews options that the university explored in arriving at final recommendations.

Assumptions

A number of assumptions have guided or limited considerations of the library facility study committee. These include:

- Continuation of the University of Idaho's role and mission assignment as the state's primary research and graduate education institution.

- Continuation of university focus on the primary emphasis areas of agriculture, architecture, engineering, forestry and wildlife, law, mining and metallurgy, as well as designated areas in the arts and sciences, business and education.

- Modest overall enrollment growth (less than 2% annually) of the university during the next 20-25 years.

- Increased growth in graduate education and research programs, particularly in biotechnology, microelectronics, water resources, strategic metals and materials, and related sciences.

- Maintenance of a centralized library service rather than separate library services for major academic units.

- Increased budgets to support the increased operating costs from the expanded library service suggested in this report.

This report is the culmination of a two-year study of space needs of the university's general library. The university is grateful to members of the library space needs study committee and to the staff of the Department of Facility Planning for their dedicated and thorough effort in completing this study. Compromise and tradeoffs between the ideal and the feasible have been made throughout the process. Much has been learned about how libraries function and how some of the emerging communications and information management technologies might shape the "library of the future." The university hopes this report will aid decision makers outside the university community to understand and to address space needs facing the library for the coming 20-25 years.

Dr. Richard D. Gibb
President

Summary of Issues and Recommendations 1

Fig. 2. North elevation of library as seen from Rayburn Avenue

Chapter 1

Summary of Issues and Recommendations

Background

In 1957 the university library moved from cramped quarters in the south wing of the Administration Building to a brand new facility. The new building, with 75,062 square feet of assignable space (excluding unfinished basement space), was designed to accommodate twenty years of growth. Budget limitations during construction resulted in a reduction in the original scope of the project with the elimination of about 7,800 square feet from the total originally planned for the third floor. In 1957, university enrollment was 3,775, full-time library staff numbered 25, and the library's collection totalled just under 200,000 volumes. The new building was equipped with seating for 1,090 readers and designed for a collection capacity of 525,000 volumes. The total cost of the building was $1.3 million.

The library was then, and still is, organized around the major subject area divisions of the collections: humanities is on the first floor; social sciences is on the second floor, along with the U.S. government documents collection and the map collection; and science/technology is on the third floor. The department of special collections and archives, a reserve book and microform reading room, book storage and various support functions are located on the ground floor together with the campus branch of the post office. The first floor also houses the technical services division (cataloging, acquisitions, serials departments), the loan department, and a browsing room. In the past, the undeveloped basement of the building provided storage for the campus and a civil defense shelter for the community, but in recent years growth of the library collections has required that the space be used for library storage.

Summary of Problem

In 1986, twenty-nine years after the "new" library building was occupied, the library is again in the situation of being in very cramped quarters. Enrollment on the Moscow campus, now at over 8,500, is more than double the 1957 level. Full-time library staff has also doubled to a total of 54, and the collection approaches 1,500,000 volumes, far above the 525,000 volume design capacity. In order to accommodate growth exceeding that envisioned by the planners of the building 30 years ago, reader seating has been eliminated over the past eight to ten years to provide space for expanding book shelving, and numerous volumes have been removed from open shelves to storage. Reader space has been significantly reduced with only 600 seats remaining in the primary use areas. The ground floor book storage area is at capacity, housing 70,000 volumes

Fig. 3. Student study spaces circa 1957-58

Fig. 4. Student study spaces in 1986

from the science and technology collection. Almost 60,000 volumes of humanities and social science materials, together with substantial amounts of special collections materials, are stored in undeveloped space in the basement where water seepage occurs and where environmental controls, lighting, staff access and servicability are inadequate. The library staff, twice the size it was in 1957, occupies in effect the same amount of space now as it did then. Computers and other electronic equipment have become standard operating features in the library and contribute further to the overcrowding, as well as creating demands upon the building's electrical system which can be met only by the use of awkward and inconvenient expedients.

Over the past twenty-nine years, steady growth in library collections, staff and patron use have paralleled the development of the university into a research-oriented, comprehensive statewide institution. During that time, a greatly increased emphasis upon research and graduate education brought new programs and new expectations for library service which the planners of the building did not, and could not, foresee. With the library being at the center of this growth and change, exactly where its mission places it, the shortage of space which it faces today has become so critical that it is imperative to address the problem. It is vitally important to look ahead to the next twenty years and plan now to accommodate the library's current and prospective space needs.

The Northwest Association of Schools and Colleges, Commission on Colleges, Evaluation Committee Report written in 1984 as the basis for reaffirmation of the university's accreditation, stated that expansion of library facilities should become the top priority of the university for this reason:

> The library is now in its 28th year of occupancy of the building, and growth projections for both collections and enrollment have exceeded projections made during the late 1950's thus moving the University of Idaho toward a crisis situation in providing information services to support the curriculum and research programs of the University at a time when the Long Range Plan of the institution is to expand and strengthen graduate and research efforts.[1]

Issues

In addressing the library's present and future space needs in this study, the university recognized the need to establish its recommendations in the context of an identification of the major potential influences upon the library's growth and operations along with a carefully detailed assessment of their anticipated effects. Following are the elements which were examined and which are labelled here as "issues" in the sense that each of them required that judgmental conclusions be formulated. Taken together, these conclusions significantly influenced the content of the recommendations:

Time period to be covered. For obvious reasons, planning for growth requires definition of the period to be covered. The projections in this study are for the next twenty years.

Growth. Enrollment projections and realistic estimates of the size of library collection and staff together with estimates of levels and kinds of future use had to be formulated.

Changes in user population. Changes in user population and characteristics, both on campus and off, had to be predicted and the potential effects of these changes upon library operations and services had to be calculated.

Information proliferation. What has been popularly labelled as the "information explosion" of the last few decades and the changing patterns of information management and access including its availability in formats other than print had to be examined in terms of how these might shape the academic library during the next twenty years.

Electronic technology. As the single most important development in information management, clearly worth the separate identification and attention given to it in this study, the current and prospective use of electronic technology had to be studied. This examination was necessary to determine the extent to which technology may be expected to contribute to a solution of the library's space needs while taking into account the space need which this use will itself generate.

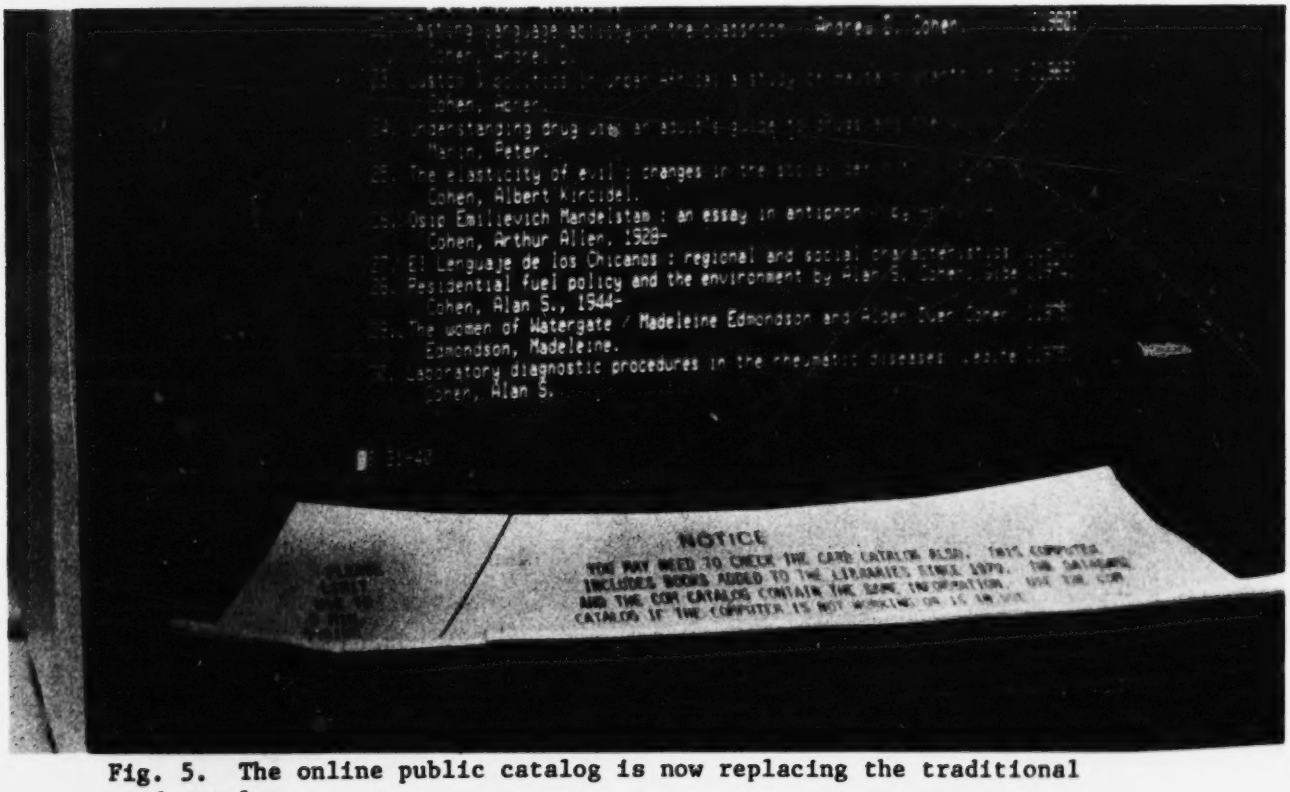

Fig. 5. The online public catalog is now replacing the traditional card catalog.

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Organizational philosophies. A re-examination of the desirability of making organizational changes that affect the library's operation was made. Among subjects evaluated were: Centralized vs. decentralized (i.e., "branch") library systems, subject library arrangement vs. centralized reference, and graduate and undergraduate libraries.

Basement Project

A project which is funded at $1.6 million and currently underway to remodel and upgrade the library basement constitutes the first step toward providing adequate space for the library for the next twenty years. As was pointed out above, the basement is being used for book storage despite water seepage and the fact that the space is undeveloped and environmentally inadequate. Upgrading of 20,000 square feet of basement space for dense book storage of up to 275,000 volumes will lead to better utilization of space elsewhere in the building. The program calls for correcting a water infiltration problem, providing environmental controls, upgrading electrical systems, extending the book lift, removing asbestos from pipes and reinsulating them, and installing fixed, high density book storage units. The basement will be managed as a closed collection area, staffed by library personnel, but generally not accessible to the public.

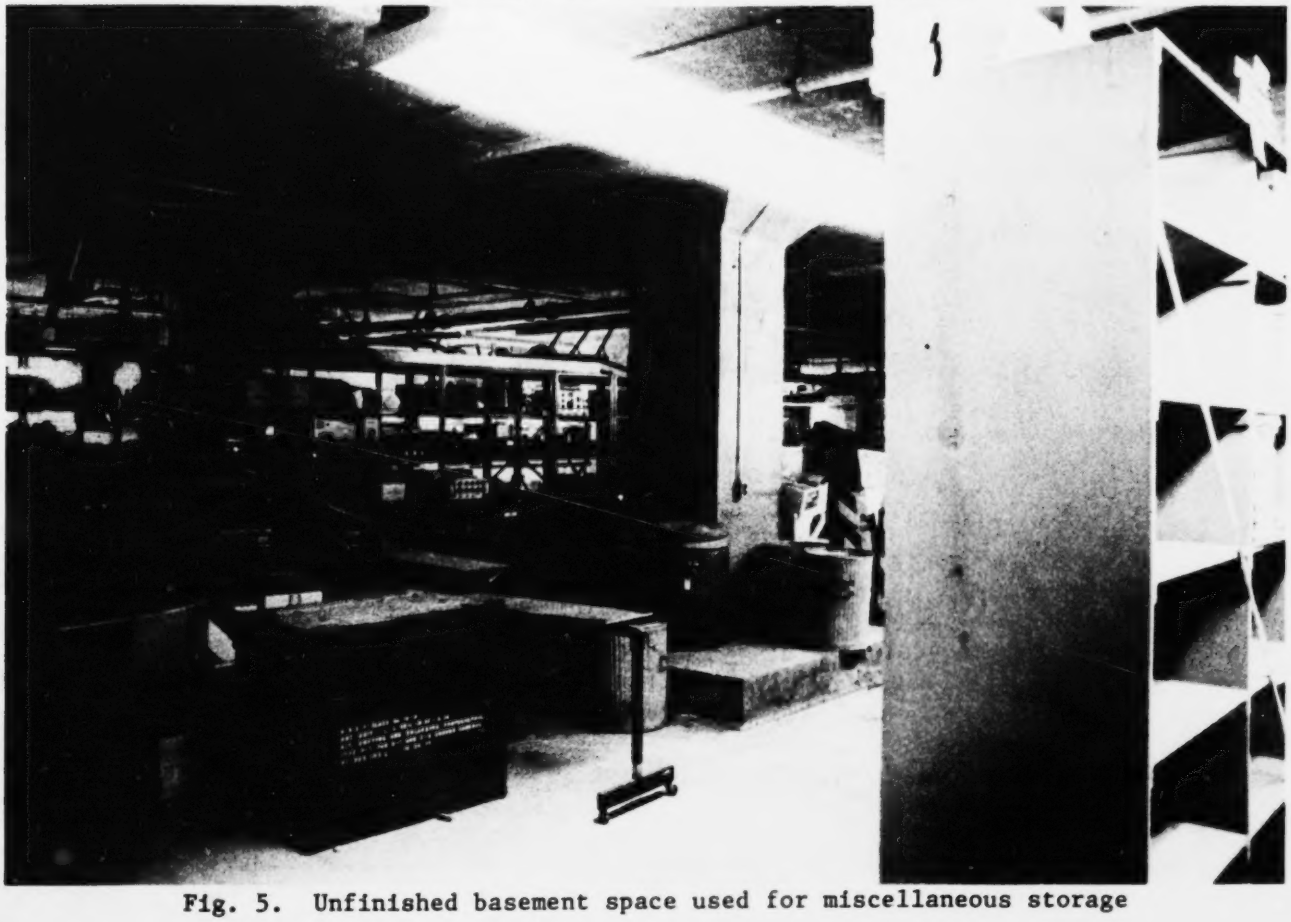

Fig. 5. Unfinished basement space used for miscellaneous storage

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Analysis

A comprehensive review of the issues helped the library space needs committee formulate possible options available to help solve the library's space needs. The study committee described and carefully evaluated all reasonable options for their operational and spatial advantages and disadvantages. Stated as questions, these options include:

What means are available to achieve more effective utilization of space?

To what extent will a greater use of automated technologies affect space needs?

What potential does the unfinished basement have for collection storage?

Will compact movable shelving systems help to reduce the overall need of space for collections?

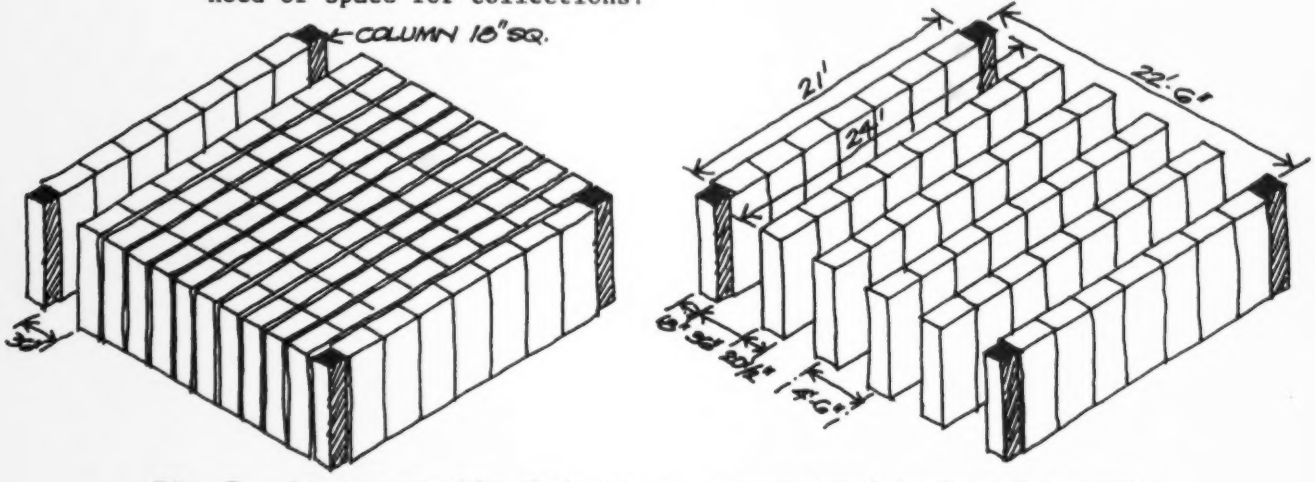


Fig. 7. Compact movable shelving vs. conventional bookstack concept can house up to twice the amount of library materials in same floor area.

What role will microforms and other non-print formats play in the planning of the future library?

To what extent might reorganization of certain library functions help to achieve more effective use of personnel and space resources?

Is it feasible to decentralize elements of the collection?

Should the library retain its status as a regional depository for the U.S. government documents collection?

Can non-library functions be relocated elsewhere on campus, freeing existing space for library expansion?

What opportunities can be found for developing reader spaces outside the library to relieve the demand?

And finally, when all efforts to use existing resources more effectively have been made, how much new space will be required to carry the library into the next century?

Possible options were also subjected to careful evaluation by the library faculty and administration, the Library Affairs Committee, and the central administration; those with the greatest merit have been incorporated into the university's formal recommendations.

Alternatives

Alternative 1: Status Quo.
Complete the Basement Upgrade Project Only.

Currently library functions occupy 87,418 net assignable square feet (of which only 75,062 is developed) in a building constructed 29 years ago. The library reached its design capacity in the late 1970's. In order to accommodate the continued growth of the collection and the addition of stacks, for the past eight to ten years reader seating has been withdrawn and numerous collection items removed to substandard storage space. If new space is not constructed, the university will be forced to continue to accommodate books by withdrawing additional seating, eliminating or reducing in size such areas as the reserve reading room, the browsing room and seminar rooms. Portions of the collection may eventually have to be discarded, and the library may be forced to reevaluate its status as a regional depository for U.S. government documents.

Staff space, both in technical and public services areas, is scattered and inefficiently crowded. Use of electronic technologies is presently limited by electrical and mechanical systems that were not designed to handle the loads. If remodeling of existing space is not accomplished nor new space provided, staff will continue to operate at less than optimum efficiency, and use of computers will be cumbersome or restricted.

This alternative is unacceptable because it fails to address the concerns of the Accreditation Report, and fails to meet the needs of housing the library collections, particularly in view of increased graduate education and research emphasis, and it fails to address the shortages of space for students and staff. The basement upgrade project only provides a very samll part of the relief needed.

Alternative 2: 114,548 GSF of Additional Space

Construct additional library space of 114,548 GSF following space standards suggested by the Association of Research Libraries (ARL) and the Association of College and Research Libraries (ACRL). The following space needs summary, projected for 2005, is based upon a conservative acquisitions rate of 20,000 volumes/year (current level).

Item	Existing Space NASF	Projected Space Need by ACRL Standards NASF
Collection Materials	48,529	96,500
Readers	13,881	45,000
Staff	12,652	35,375
Subtotal	75,062	176,875
Basement	14,112	
Total	89,174	176,875
GSF	121,285	235,833

To construct 114,548 GSF new space would cost:

114,548 GSF @ $125/SF	$ 14,318,500
5% Contingency	715,925
Subtotal	$ 15,034,425
10% Design Fees	1,503,443
Subtotal	$ 16,537,868
4% Other Project Expenses	661,515
Estimated Project Construction, New Space	$ 17,199,383

If remodeling of existing space is added, cost for all work could exceed $19,000,000.

This alternative was rejected because the standards used by library organizations are unrealistic for the University of Idaho and the State. Also, this alternative did not consider numerous space saving adjustments and options that the study committee believed could be incorporated into the project. Furthermore, the standard library space criteria used by the national organizations does not appear to reflect the use of emerging information management and communications technologies that are available for consideration in such a project.

Alternative 3: 59,000 GSF Addition

Construct 59,000 GSF additional space and remodel existing space.

This alternative is recommended for a number of reasons:

1) Builds upon Phase I, the upgrading of 20,000 SF of available basement space for on-site storage of up to 275,000 volumes in space-saving, high density shelving and thereby reduces the overall need for new space.

2) Is considerably less expensive than Alternative 2, yet accommodates the basic need for library programs now and for the next 20 years.

3) Has realistically projected cost and scope, yet allows for preserving and the enhancing university's and state's investments.

4) Corrects building deficiencies and allows better utilization of existing space.

5) Compromises on the amount of campus-based library space to support the housing of collections by employing state-of-the-art electronic communications and information management systems that allow access to shared collections at other libraries and access to national information databases.

6) Provides different levels of access to collections based upon the level of demand for and use of the materials.

7) Reorganizes and adjusts library functions to provide more effective use of personnel, space and materials resources.

8) Provides ample space for reader seating (for 10% FTE enrollment) in the library and proposes to meet the need for additional seating by providing it elsewhere on campus.

Recommendations

In conclusion, the university makes the following general recommendations for library space:

1) Complete the library basement project to upgrade undeveloped space for storage of up to 275,000 volumes.

2) Relocate non-library functions, such as the satellite post office and departmental equipment storage, to alternative space elsewhere on campus.

3) Remodel existing space to upgrade building systems, improve building efficiency and correct code deficiencies.

4) Construct 59,000 square feet of new space to accommodate present shortages and projected 20-year needs.

Budget Estimate and Funding Strategies

The Phase I basement remodel/upgrade project is estimated at a total of $1,686,300. This amount was funded in fiscal year 1986 by the Idaho State Legislature.

The Phase II library addition and remodel project is estimated at $10,337,036, as follows:

Library Budget Estimate

New Space	
7,900 GSF (3rd floor) @ $100/SF	$ 790,000
51,100 GSF @ $125/SF	6,387,500
Subtotal	$ 7,177,500
Remodel	
75,000 SF average $10/SF	$ 750,000
Compact shelving for closed collections (documents, special collections)	642,000
	$ 1,392,000
Subtotal	$ 8,569,500
Contingency (New) 5%	$ 358,875
Contingency (Existing) 10%	139,200
	$ 498,075
Subtotal	$ 9,067,575
Fees 10%	$ 906,758
Other Project Expenses 4%	362,703
TOTAL	$10,337,036

The university proposes that the phase II portion of the library project be funded by obtaining $6.5 million from the Permanent Building Fund, with the balance funded from gifts and donations and by using debt financing. If the entire balance of $3,837,036 were to be funded by a 30-year bond issue, the annual debt service would be approximately $350,000. This is equivalent to about $30 per semester for a full-time student. By refinancing the 1985 bond issues that are currently short-term variable rate issues, it may be possible to issue the $3,837,036 debt and cover it with student fees, without increasing student building fees. Any gifts and donations that may be obtained would reduce the need for debt financing.

The dilemma faced in proposing funding for major construction projects is the inadequacy of the Permanent Building Fund to support major capital improvement projects. The $5.5 million annually available simply cannot be stretched across all of the capital improvement needs of the state agencies and institutions.

The university's concern is not only the inadequacy of the state funds, but also the burden that this situation is placing on student building fees to finance higher education facilities.

While it may be possible to finance a portion of the library project from student fee supported debt, there are several other major capital improvement projects in the planning stage at the university. Plans are being developed for a $10 million expansion for the engineering/mines facilities and for a $7.5 million University Center; these projects will also need some kind of institutional funding support, such as debt financing, to help the state fund these needed capital improvements. The need for the additional space on the campuses, either to replace old and obsolete facilities or to support the expanding demand for educational services, is growing; yet the means to finance these needs does not seem to be keeping pace.

Library Organization 2

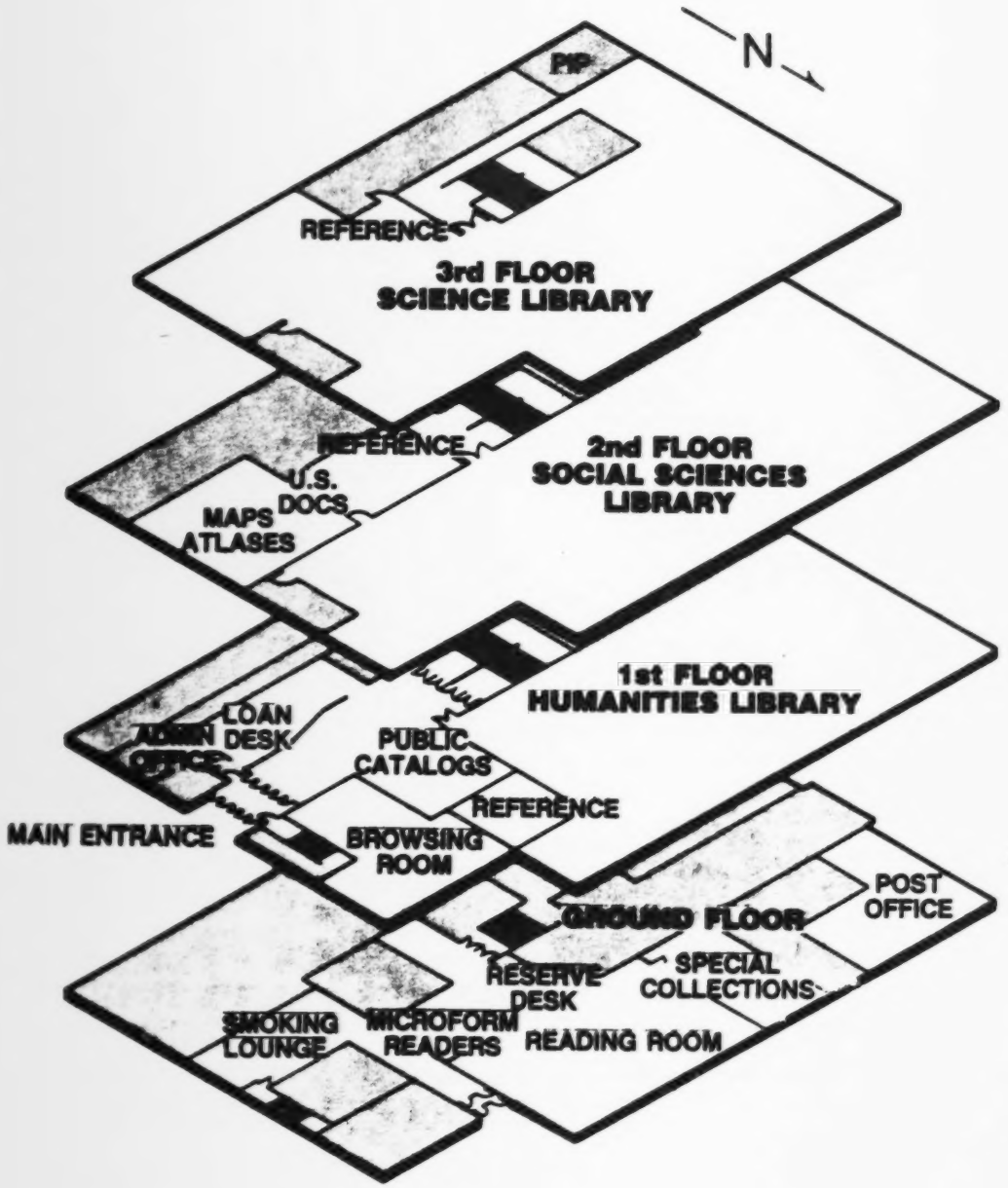


Fig. 8. University of Idaho library--existing functional arrangement

Chapter 2

Library Organization

Role and Mission

The role and mission statement of the University of Idaho and the recently-developed long-range plan provide the basis for growth of the university during the next ten years. Future growth of the university and anticipated changes in the university's role have significant implications for the library. The library's current shortage of space seriously hinders its ability to fulfill its designated mission. This section examines the roles, missions, and goals of the University of Idaho and how they relate to the library. The university's mission statement, adopted by the Board of Regents in October 1983, delineates instruction, research, and public service functions of the University of Idaho. As the state-wide comprehensive land grant institution, the university offers a wide range of baccalaureate degrees in both general and professional programs. It also has the principal statewide responsibility for granting the Ph.D. degree and is Idaho's primary research institution. As the state land grant institution, the university serves the entire state delivering its principal educational and research programs throughout Idaho.

The university's long-range plan sets forth fifteen goals that deal with instruction, research, and public service functions of the university. Fulfillment of the goals is bringing about changes that have direct impact on the university library. Strengthening undergraduate programs and curricular reform in several disciplines, together with upgrading graduate education programs result in significantly increased demands upon the library.

The long-range plan places much greater emphasis upon research.

> ...the university now will dedicate itself to attaining a more broad-based research reputation. Thus, faculty will be expected to conduct research or engage in creative activity.[2]

Access to resource materials housed in the library is critically important to carrying out research. Increased research demands upon faculty will increase demands upon the library.

A much needed refocusing and reorganization of public service functions of the university will place additional demands upon the library. Courses offered off campus are increasing rapidly, and individuals throughout the state will make more and more use of resources available through the University of Idaho library.

Three significant factors addressed in the university library's ten-year plan are:

a) Fundamental changes in the population of users or potential users of library services.

b) Availability of new technology for application in providing these services.

c) Ever-increasing proliferation of information to be brought under control.[3]

Interaction of these factors led to formation of the following goals for the library for the next ten years:

1. To complete conversion of card catalog records into machine readable form, then to establish an online catalog accessible from remote locations, on campus and off.

2. To continue work already underway to implement an integrated computerized system with appropriate internal and external interfaces.

3. To continue to strengthen book and journal collections while simultaneously developing and enlarging the capacity to make scholarly resources located elsewhere available locally in either traditional or electronic form.

4. To provide appropriately for space and staffing needs of the next decade.[4]

The appendix provides a more detailed list of the university's long-range goals and the library's objectives and activities to accomplish them.

Functions and Organization

Functionally the library is divided into two divisions--Public Services and Technical Services. The library organizational chart which follows on the next page summarizes the relationships of the various departments.

Public Services

The Public Services division includes those departments dealing directly with the public. This division includes the loan department and the humanities, social sciences, science/technology libraries, and the special collections department.

ORGANIZATION AND OPERATION CHART OF THE UNIVERSITY OF IDAHO LIBRARY
(Regular Staff Only)

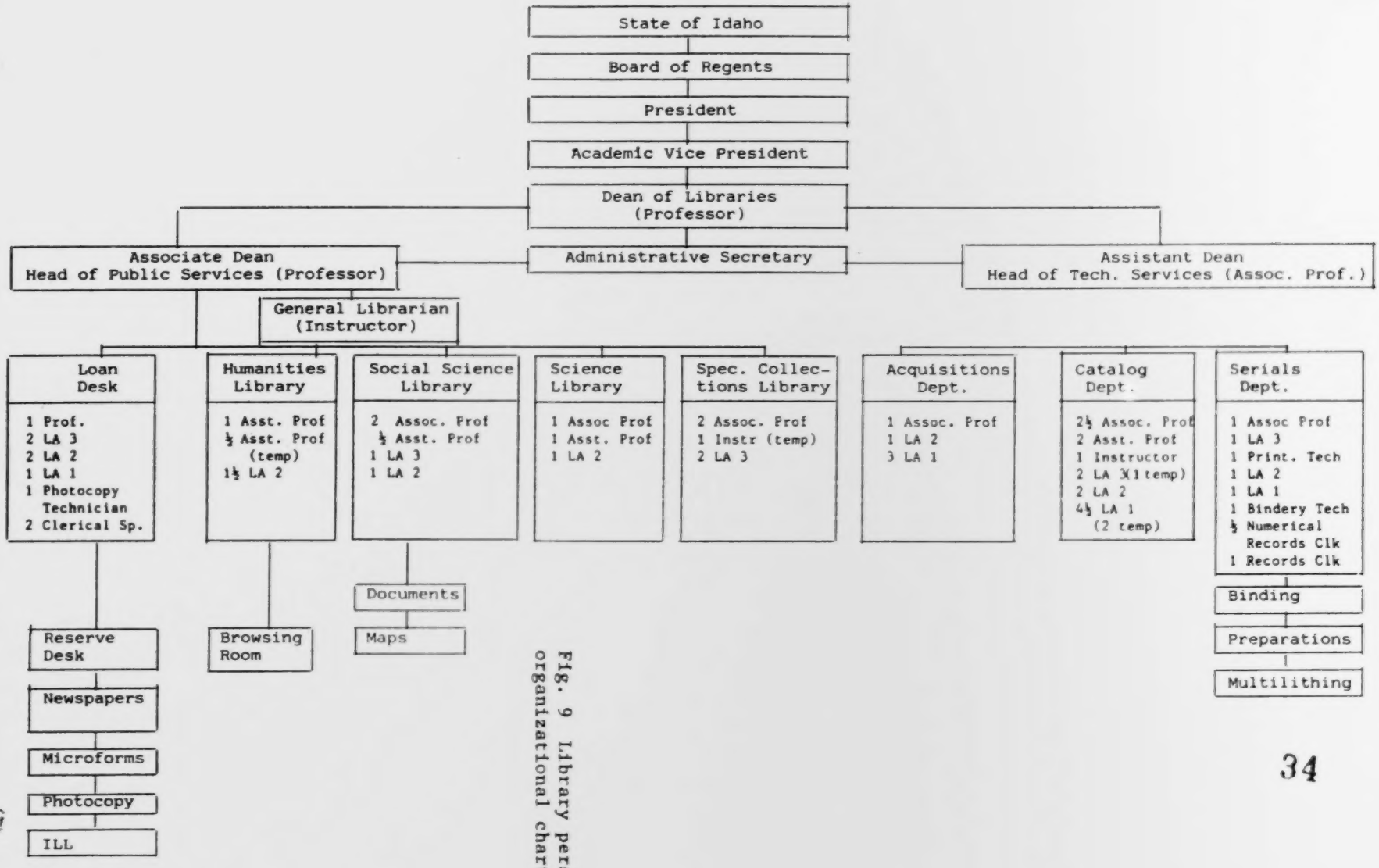


Fig. 9 Library personnel organizational chart

Loan Department Function - Circulation. The main function of the loan department is circulation of library materials. Bound journals no longer circulate. At present, all circulation activities except overdue notices are done manually. A number of files of book cards are kept including a file of those books in storage, those at the bindery, and those at the reserve desk.

The following table summarizes circulation statistics for the last twelve years.

TABLE 1

CIRCULATION STATISTICS

Type of Use	FY 1973	FY 1974	FY 1975	FY 1976	FY 1977	FY 1978
Regular Loans	72,617	77,907	72,435	68,856	73,120	78,615

Type of Use	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984
Regular Loans	78,854	92,316	84,937	90,832	92,608	93,171

Type of Use	FY 1985	FY 1986
Regular Loans	98,003	100,478

Although bound journals no longer circulate freely as they did in 1973, there has been a 28% increase in the number of regular loans processed by the circulation department. During the last three years circulation has averaged approximately 92,200 loans per year, a substantial increase from approximately 75,000 a year during the mid to late 1970's. The implementation of the core curriculum and an increasing emphasis upon writing in all university courses will lead to a continual increase in yearly circulation.

Personnel from the loan department shelve and reshelve returned books and other items checked out or removed from the shelves.

Loan Department Function - Photocopy Services. A photocopy technician operates the copier located in the loan department and maintains public-use copy machines on the other floors. The total number of pages photocopied in the library including coin-operated machines has increased from 501,803 pages in fiscal year 1973 to 991,279 pages in fiscal year 1986, an increase of nearly 200%.

Loan Department Function - Interlibrary Loans. More than 50% of the items loaned and borrowed through the inter-library loan system are photocopies. The decision to join the Western Library Network (WLN), which has provided easier access to the holdings of other libraries in the system, has increased the number of items loaned and borrowed through the interlibrary loan system. The table below shows the increase in the number of items borrowed and loaned from fiscal year 1973 to fiscal year 1986. The number of items loaned has increased by 316%, while the number of items borrowed has increased by only 217%. In fiscal year 1973 the university loaned 2.36 items for each one it borrowed. By fiscal year 1986 the ratio of the number of items loaned to the number of items borrowed was 3.43 to 1.

TABLE 2

INTERLIBRARY LOANS

Type of Use	FY 1973	FY 1974	FY 1975	FY 1976	FY 1977	FY 1978
Interlibrary Loans						
Borrowed	1,423	1,908	1,987	1,314	2.339	1,999
Loaned	3,357	4,347	3,904	4,294	4,557	4,609

Type of Use	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984
Interlibrary Loans						
Borrowed	2,425	2,047	2,147	2,656	2,214	2,967
Loaned	5,384	5,473	7,133	7,969	6,275	9,071

Type of Use	FY 1985	FY 1986
Interlibrary Loans		
Borrowed	3,054	3,092
Loaned	9,415	10,598

Approximately 46% of the items borrowed in fiscal year 1986 were borrowed from Washington State University via a shuttle service connecting the Moscow and Pullman campuses. However, only 8% of the items loaned were requested by Washington State University. Another 41% of the items were borrowed by other Western Library Network institutions or by institutions located outside of the region.

Through interlibrary loans the University of Idaho library provides a valuable public service, acting as a resource center for public libraries in the state of Idaho. In fiscal year 1986 a total of 3,121 items, or approximately 29% of the total number of items loaned, were sent to libraries in Idaho and University of Idaho extension staff.

The United States Department of Agriculture (USDA) is the second-largest recipient of items loaned through interlibrary loan from the University of Idaho library. Through the Western Forest Information Network (WESTFORNET), library and technical information services are supplied to USDA Forest Service employees and other authorized users located in the state of Idaho. In fiscal year 1986 approximately 22% of the items loaned went to these users.

According to past trends the number of interlibrary loans will continue to increase. The listing in WLN of only a small percentage of the documents collection has already increased the demand for photocopies of these items. The increasing number of database searches being done for researchers will also increase the demand upon the interlibrary loan service as researchers discover the availability of additional material.

Loan Desk Function - Reserve Desk. The reserve desk is located on the ground floor. Employees of the reserve desk process short term loans, maintain approximately one year of newspaper backfiles, and maintain and retrieve microforms.

Approximately three-fourths of the material housed in this area is placed on reserve for specific courses. One-fourth of the material is placed on reserve by the library for security reasons, i.e., the material could be damaged or stolen if not subject to close control.

Table 3 below shows the use of reserve materials during the last twelve years. There was a substantial increase in the use of materials during the late 1970's, reaching a peak in fiscal year 1979. Since that time the use of reserve materials has declined. A combination of several factors may be responsible for the decline including reliance upon outside vendors to make photocopies for class use, changes in enrollment mix, greater reliance upon individually-purchased collections of readings, and curricular changes that have placed more emphasis on self-directed study.

TABLE 3

RESERVE BOOK USE

Type of Use	FY 1973	FY 1974	FY 1975	FY 1976	FY 1977	FY 1978
Reserve Books	58,689	75,179	80,414	90,132	99,206	104,370

Type of Use	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984
Reserve Books	108,808	105,100	75,708	80,038	81,841	67,301

Type of Use	FY 1985	FY 1986
Reserve Books	59,666	56,513

As noted previously, the number of regular loans increased during the same period of time, resulting in a net increase in the use of library materials even given the reserve loan decreases. The greater popularity of study and the increasing emphasis upon writing and research have merely altered the types of library materials used.

Reserve desk personnel also maintain one year of the backfiles of newspapers. When microform copies are received, hard copies are discarded. For newspapers for which microform copies are not received, issues older than one year are kept in the basement. The humanities library staff retrieve these papers on demand.

Reserve desk personnel are responsible for maintaining the 1,293,411 item (equivalent to 227,727 volumes) microform collection. Staff supervise operation of two microform reader/printers and ten microform readers.

Humanities Library

This library is on the main (first) floor and houses the general collection of books and periodicals, the reference collection, indexes and abstracts in the general subject areas of philosophy, psychology, religion, music, art and architecture, language, literature, communications, children's books, writing, printing and library science. Staff here are responsible for overall operation of this library and browsing room to include reference assistance, bibliographic instruction, collection development, and online searching.

Social Science Library

This library is on the second floor and houses the general collection of books and periodicals, the reference collection, indexes and abstracts in the general subject areas of history, geography, anthropology, sports, economics, business, political science, law, education, and military science. In addition, extensive collections of maps and U.S. government documents are housed here. Staff are responsible for overall operation of this library, maps, and U.S. government documents to include reference assistance, bibliographic instruction, collection development, and online searching.

Science and Technology Library

This library is on the third floor and houses the general collection of books and periodicals, the reference collection indexes and abstracts in the general subject areas of science, medicine, agriculture, forestry, engineering, photography, manufacturing and home economics. The staff here are responsible for the overall operation of this library to include reference assistance, bibliographic instruction, collection development, and online searching. The Postharvest Institute for Perishables Information Center (PIPIC) is also located on the third floor. PIPIC was established through a grant from the U.S. Agency for International Development.

Special Collections and Archives

This department of the library is on the ground level and holds those primary research materials which because of their subject coverage, rarity, source, conditions, or form must be maintained separate from the library's general collection. Among these are the Day-Northwest Collection, Idaho State Documents (including publications of the four state-supported institutions of higher learning), the Sir Walter Scott Collection, the Ezra Pound Collection, the Caxton Collection, the first (or security) copy of all dissertations and thesises accepted at the university, historical maps, Pacific Northwest directories, historical photographs, personal and organizational papers and records, and the archival records of the University of Idaho. Staff are responsible for the overall operation of this department including reference, bibliographic instruction, collection development, and those technical processes specific to special collections, such as the arrangement and description of manuscripts and archives.

Technical Services

The technical services division is divided into three departments: 1) acquisitions, 2) serials, and 3) cataloging. Binding and preparations are subunits of the serials department. The division orders and processes library materials for the library. The work flows in sequence through three units. The library's membership in the Western Library Network (WLN) results in the departments within technical services relying heavily upon automation. WLN joins about

125 member libraries and maintains a bibliographic database with about four million catalog records. Machine readable catalog records are generated, producing a computer output microfiche (COM) catalog.

Acquisitions Department

This department orders and receives all non-serial library materials. Personnel in the department receive purchase request forms for items, verify information by using manual bibliographic tools and WLN terminals, and prepare order forms to be sent to various vendors. Acquisitions personnel handle cancelled orders and resolve other problems with filling orders from vendors. The head of acquisitions communicates directly with book companies and sales representatives. An extensive publishers catalog collection is also maintained by acquisitions. When the material is received, the bills are paid and the materials move to the catalog department.

All gifts of materials to the library are initially received by acquisitions. Materials are sorted and dispersed as required with some going to serials, some to cataloging (after bibliographic verification), and others are retained for future book sales.

The department administers an "approval plan" that allows for review of potential acquisitions before the material is purchased. According to established profiles, the vendor sends books of interest to subject area librarians. On receipt the books are unpacked, inspected by subject librarians, and dispersed to cataloging. The items not selected for purchase are repacked and sent back to the vendor.

Serials Department

The serials department orders and disseminates serials and periodicals for the library and maintains records for the department. Each item is checked in as it arrives and claims are made for those which fail to arrive. The bibliographic identity of each item is monitored. The department records changes in title, publisher, editor, etc., and communicates these changes to other work units. The WLN data base is used for preorder searching and bibliographic verification.

The serials department uses the campus mainframe computer to generate the COM periodicals inventory, a complete listing of serials and periodicals held by the library and used by patrons to locate bound periodicals. New and updated information is entered into the database on a regular schedule.

The serials department processes new orders and cancellations when necessary. Personnel in this department must work closely with several periodical vendors. The head of serials also communicates with various other vendors and sales representatives.

As individual issues and volumes arrive they are recorded. The manual check in records is being converted to an automated system that will be operational in 1987. The binding records will also be automated using this system. Further development of the system will result in terminal access to the database from various locations throughout the library.

The department also handles serials and periodical gifts and exchanges. As duplicate copies of items are accumulated they are inventoried and offered for sale or exchange several times a year. Efforts are underway to transform this manual operation to an automated process using a microcomputer.

The department handles all binding, both commercial and local. Commercial binding involves checking received issues for completeness, filling out bindery forms, and preparing materials for pickup by the College Place bindery. Book repairs and covering paperbacks with hard covers is also part of this process. Upon receipt of a return shipment, the volumes are unpacked, checked for accuracy, and sent to their various locations. Dissertations also follow this flow of work.

Local binding begins with the same preparation steps as commercial binding. Depending on the type of binding required, appropriate pieces of cardboard or binding board are sized and cut to fit the volume. In some instances the volumes have already undergone a glueing operation. The board covers are attached with tape, and sometimes a fly leaf. Hand lettering the spine with title and call number completes the process.

The book preparation unit completes processing items after they have moved through the division. Final steps include preparing and attaching call number labels, cards and pockets, theft detection strips, and making minor repairs.

Printing is a subunit of serials attached to the local binding operation. This unit prints the library forms and miscellaneous publications.

Cataloging Department

The cataloging department receives new material from acquisitions and serials and either produces a cataloging record or utilizes records already in the WLN database. For each new item an entry in the COM catalog is made.

A majority of the books received already have cataloging records in the WLN database. If a record for a new book is in the database, the library holding symbol is attached to it. Those not found in the database must be cataloged. This operation is the department's single largest use of time and personnel.

Original cataloging is a manual operation that is very labor intensive. It is the most expensive per unit of any task in the

library. Since there will always be books not having catalog records in the WLN database, there will always be the need for original cataloging. These locally produced records are input into the WLN database.

The cataloging department is also in charge of the original and database cataloging of serials and periodicals. Interaction between cataloging and serials is necessary since cataloging personnel use files found in the serials department.

The department maintains the cataloging records already in use. Personnel correct errors and make modifications and changes. This process often requires retrieving books or verifying circulation records to find the books in question. In this connection departmental personnel also recatalog old material to increase accuracy or conformance with the collection.

Exisiting Facilities and Site 3

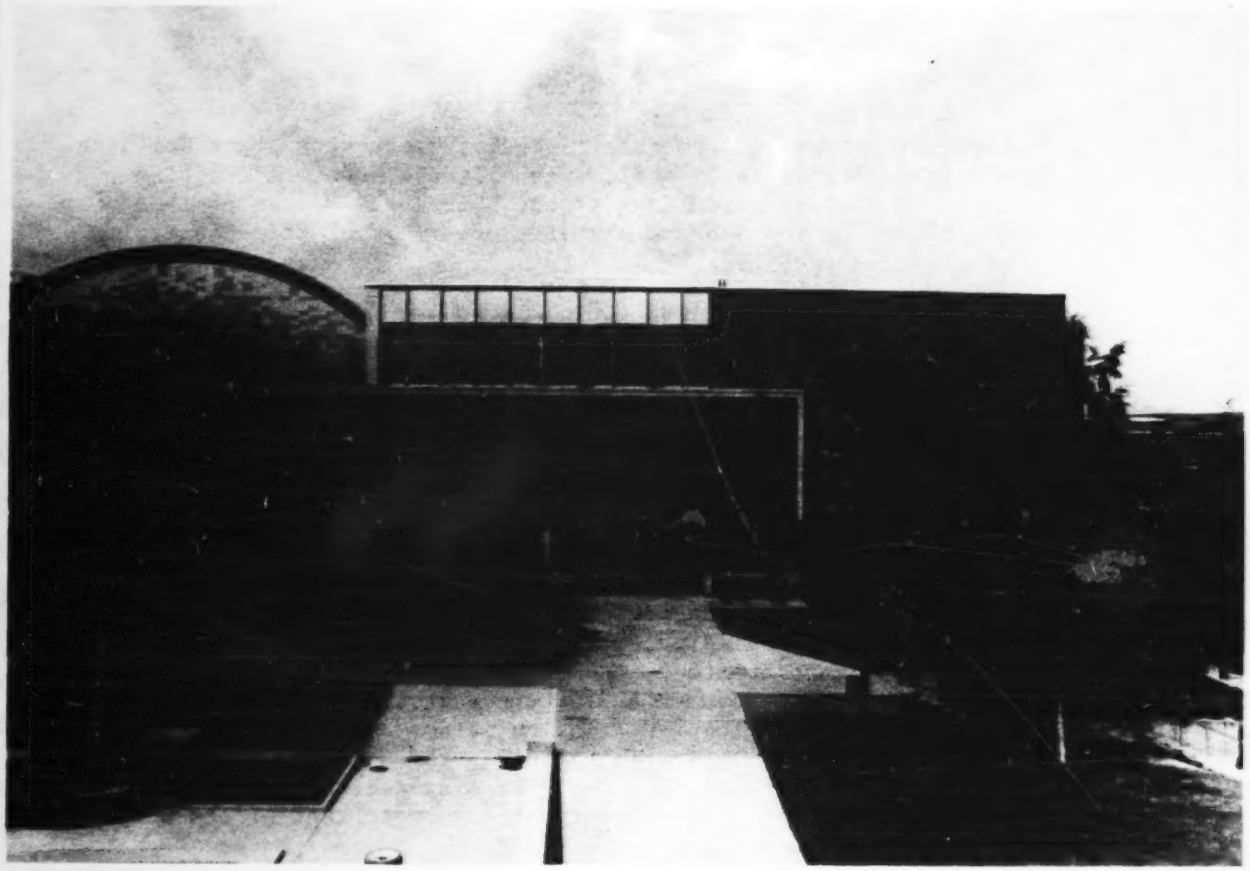


Fig. 10. East elevation of library showing relationship to pedestrian mall

Chapter 3

Exisiting Facilities and Site

Basic Building Facts

State Building Code	29034
UI Insurance Number	A-25-1957
Replacement Value	$ 9,097,259
Value of Contents	$45,138,560
Cost of Original Construction (1957)	$ 1,305,490
Building Area	
Gross	121,285 SF
Net Assignable	75,062 SF
Efficiency	62%

General Building Description

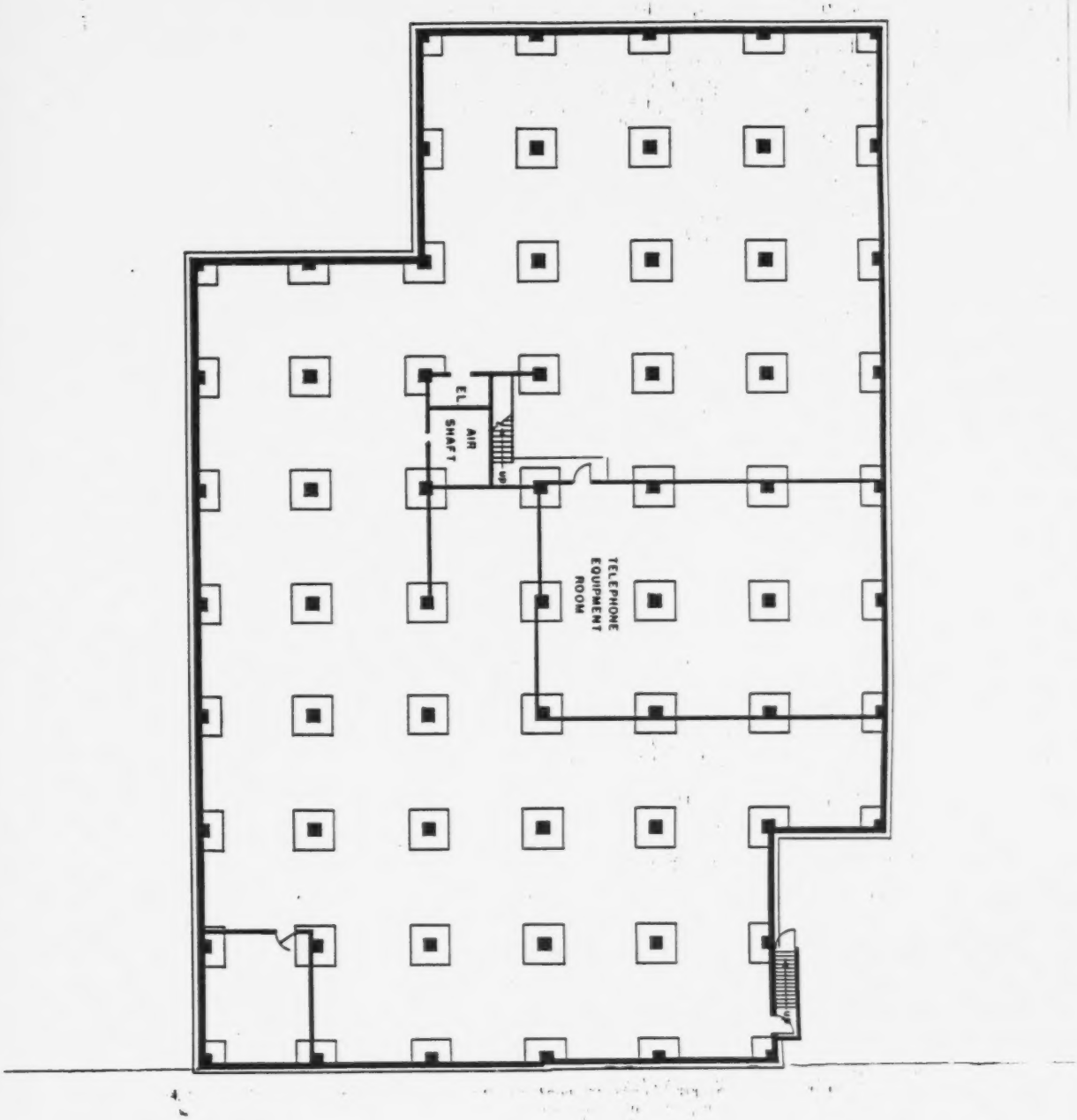
The university library is a modern five-story, concrete frame building finished with brick veneer. A glass and porcelain-enamel curtain wall covers the entire north face of the building. Design of the project was done by the Spokane architectural firm of Whitehouse, Price, Deneff and Deeble.

Construction began in June 1956 by Busboom and Raugh also of Spokane, Washington. Cost of construction in 1957 was $1,305,490 while the building is currently valued at over $9,000,000. With a size of 121,285 square feet, the library is one of the university's larger buildings; it has an assignable area of 75,062 square feet, giving the building a 62% efficiency rating. It is significant to note that the basement of the library was never developed as finished space, and this lowers the efficiency of the building because the entire basement floor is not considered assignable.

Over the 29-year life of the library, several minor modifications have been made to the building, such as the addition of a telephone equipment room, improvements to the university post office as well as air conditioning improvements. However, at this date no major modification has been attempted. The building has served the student and faculty population in virtually the same way since 1957. The major use change, that will be discussed more thoroughly elsewhere in this study, is the continuous encroachment of the book shelving into reading and study space. In most cases gradual changes such as this have required little or no structural modification and do not appear as construction of note.

Structural System

The concrete structural system consists of columns organized in 22'-6"



University of Idaho
Department of Facility Planning

Library Building

Basement

46

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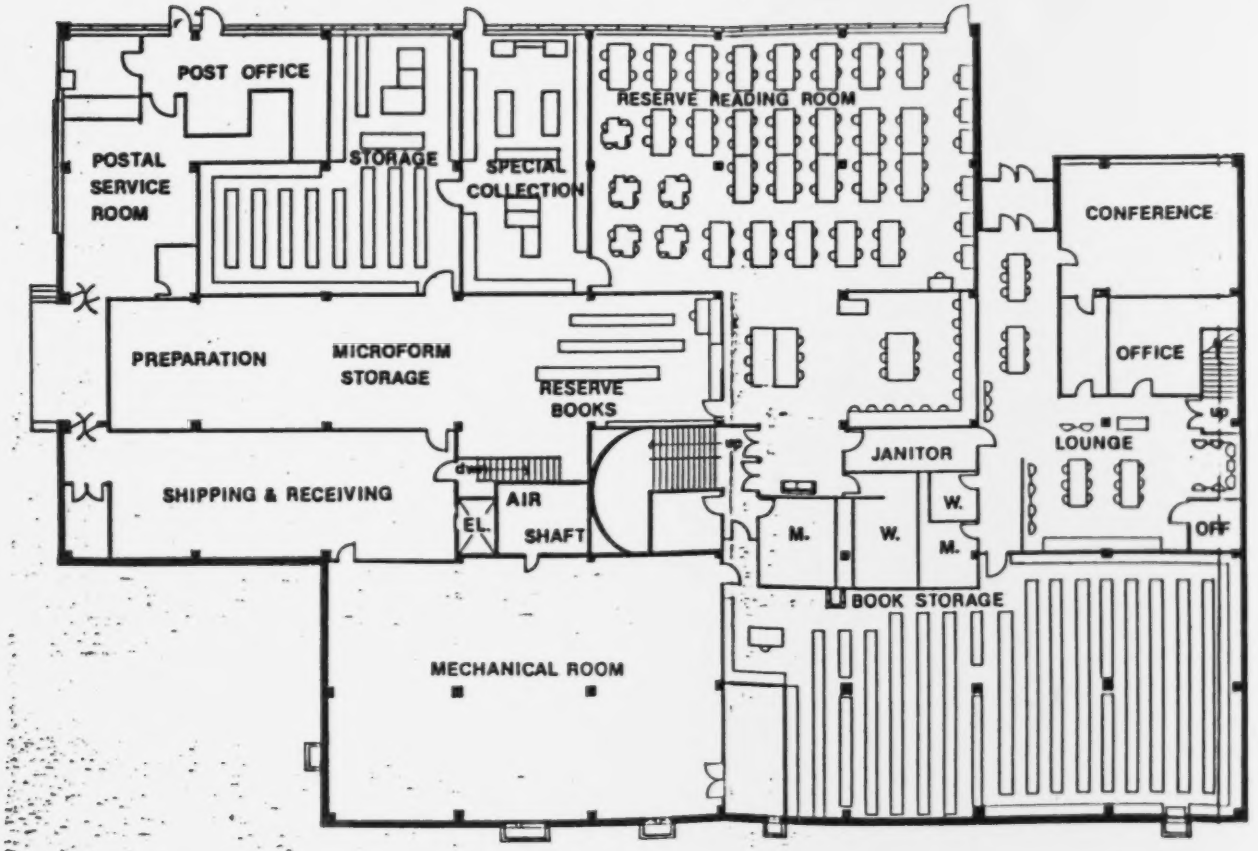
N



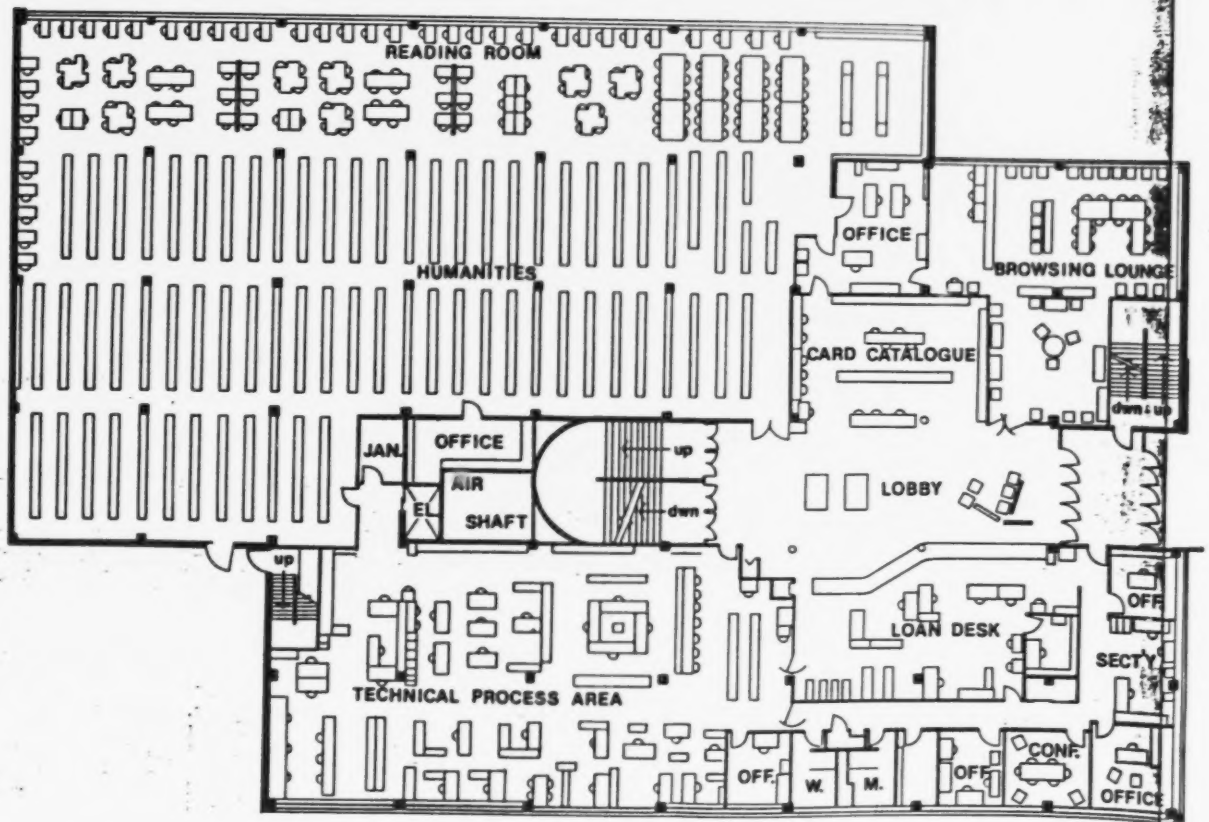
University of Idaho
Department of Facility Planning

1" = 20'

Library Building

Ground Floor

University of Idaho
Department of Facility Planning



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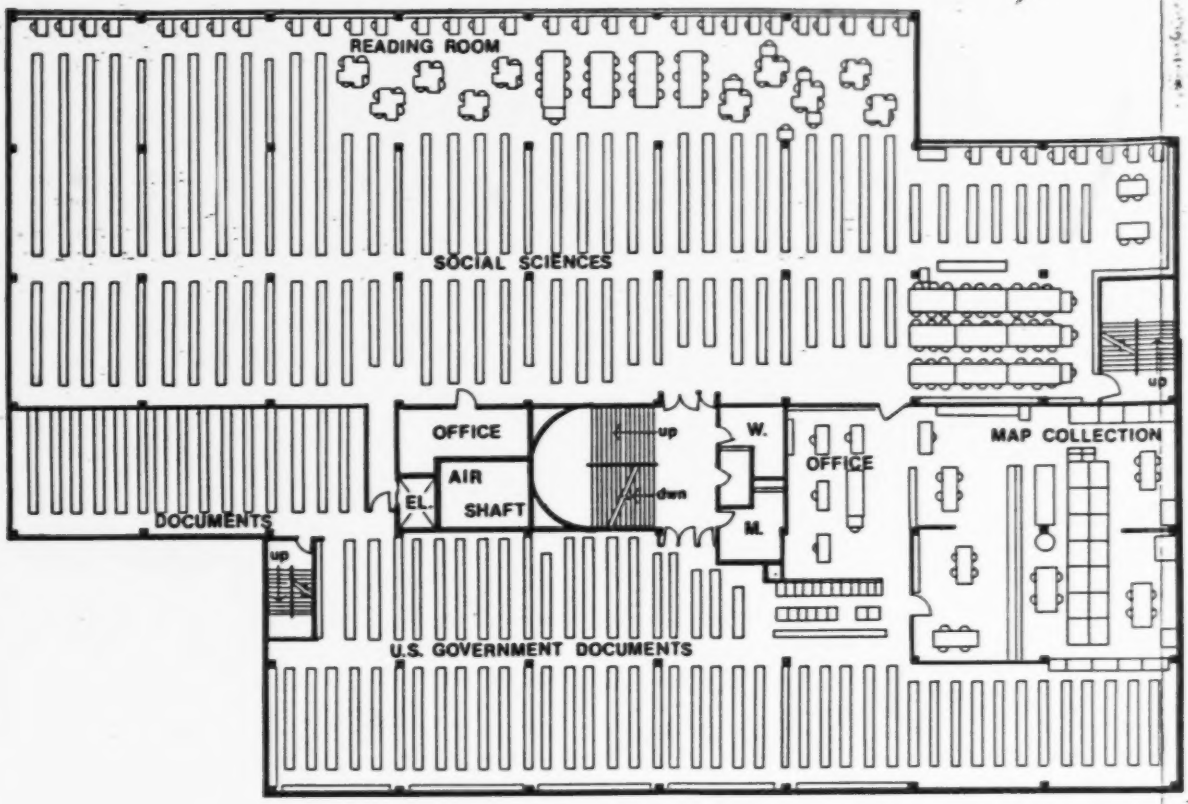
Library Building

First Floor

7-86



University of Idaho
Department of Facility Planning

N

1" = 20'
0 5 10 20 40

Library Building

Second Floor

University of Idaho
Department of Facility Planning

1" = 20'

Library Building

Third Floor

square bays with reinforced 6" two-way slab. In general, the floor loads used throughout the building are 125 lbs. per square foot.

The 1982 edition of the Uniform Building Code recommends a 125 lb. live load for library buildings. Some deflection is now seen in various areas of the building where storage system densities have been increased, but in general the structure is in good condition and should continue to serve for many years. Typical floor to floor spacing is 13'-0" while floor to floor spacing in the basement is 11'-6". It is obvious to consider the basement for overflow storage space and, in fact, much of the basement is currently used in a storage capacity. Several physical obstacles, however, prevent more efficient utilization of the basement space.

1) The floor to ceiling space of 11'-0" is rather minimal and if one subtracts 3'-0" for installation of ductwork and lights, a finished ceiling height of 8'-0" remains. This is adequate for storage activity but not recommended for public use space.

2) The usable duct space is further minimized by the numerous pipes now running throughout the basement.

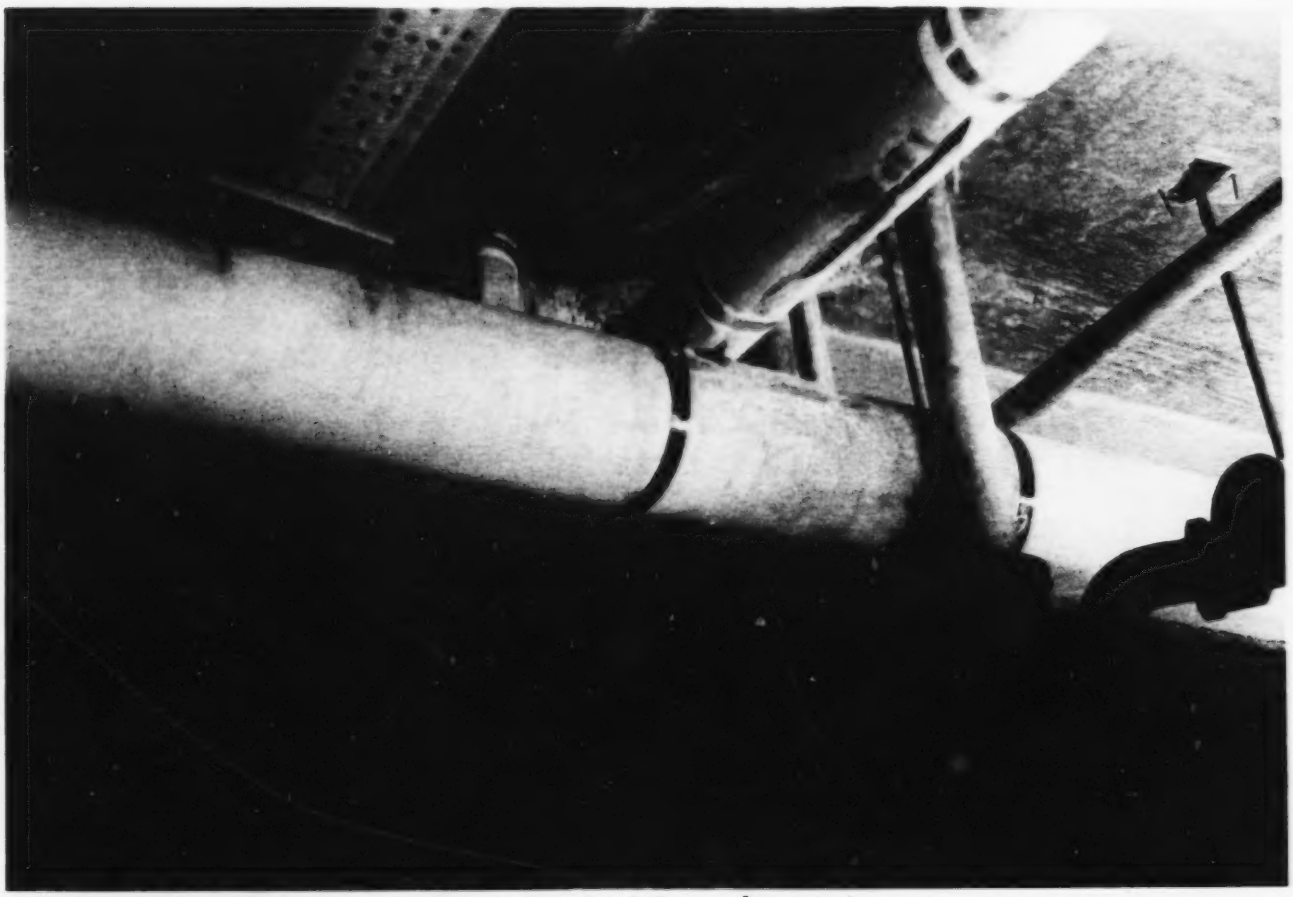
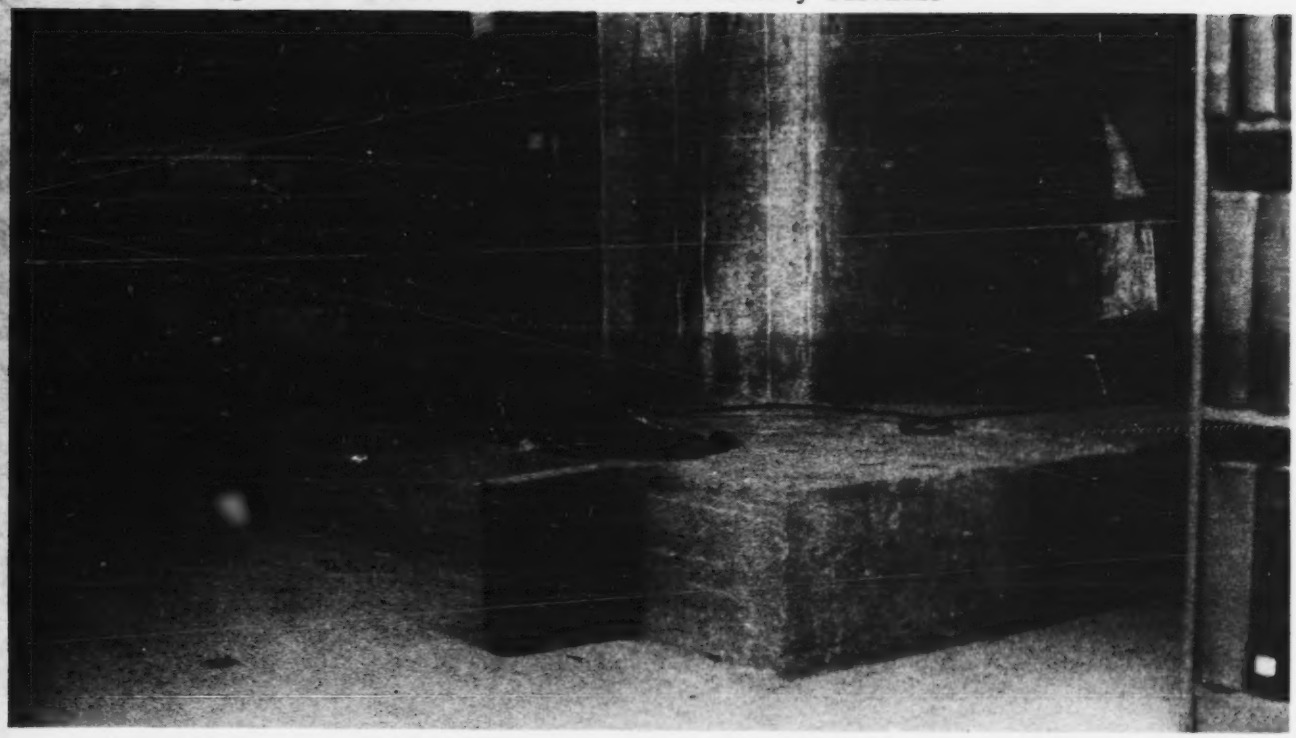


Fig. 17. Examples of piping in library basement

Fig. 16. Structural foundation in library basement



3) The building foundation is developed on a series of eight-foot square pads which are raised 11" above the basement floor. These pads occupy about 13% of the entire floor area.

4) The library appears to be built in an area with perched water tables. Thus, ground water has continually found its way into the basement area providing a water problem and higher-than-desired humidity. A project recently funded by the State of Idaho, Division of Public Works, has allowed the university to address the issue of draining the building foundation area. The project is presently under construction.

These obstacles will all need to be carefully considered in future design work.

Mechanical System

The building is heated by perimeter hot water baseboard convectors and steam unit heaters in the entry areas. The steam is provided by the central campus plant.

The ventilation system consists of a single constant volume air handling unit for each floor with a two-speed motor, steam heating coil, electronic filters and return air fan. Outdoor air is supplied to each unit by a central "air washer" unit with steam preheat and reheat coils and a D-X refrigeration coil. All three of these coils have bypass dampers. The air washing system has been disassembled, and an attempt to have evaporative cooling using paper-type media was unsuccessful. The D-X refrigeration coil is served by a nominal 60-ton compressor located in the ground

floor mechanical room with a remote air cooled condenser on the roof outside the mechanical penthouse.

A 4-zone multi-zone unit was added in 1967 and serves parts of the ground and first floors. The unit is located in the ground floor mechanical room and has a steam coil in the hot deck, D-X refrigeration coil in the cold deck, a remote air-cooled condensing unit, outdoor air economizer cycle, and return-air fan.

The librarian's office on the first floor has a completely self-contained system: an air-conditioned unit ventilator with electric baseboard heat. The original supply grille to the office has been blocked off.

The controls in the building shut off the air conditioning coil in the large outdoor air handling unit at 50°F. The leaving air temperature from the outdoor unit is controlled by a duct-mounted thermostat set for 50°F. Thus, all four air handling units (one for each floor) receive the same temperature outside air which is then reheated as required by the steam coil in each unit. A single thermostat located on each floor controls leaving air temperature of its air handling unit.

The interior perimeter of the building is divided into three heating zones on all floors, north and east, south, and west. These zones are thermostat controlled to provide proper heat at the exterior walls. This system is seasonally shut down, and there are always a few complaints of cold temperatures along the windows on cold "shoulder-season" mornings before the system has been restarted.

Complaints are voiced that the library becomes "too warm" during days when the outside temperature exceeds 85°F; also "there is not enough capacity in the air conditioning system" was reported by the staff.

The building has no night-setback control presently. Originally, the air handling units had two-speed motors, but these currently operate at a single speed.

In 1985 modifications were made to the existing cooling system by adding a 10-ton chiller in the existing mechanical room. This modification, costing approximately $140,000, gave the library adequate cooling capability on all but the hottest days.

While the existing mechanical system is adequate for the area it presently serves, significant modifications/additions to a 30-year-old mechanical system are not recommended. New mechanical equipment will be required for the ventilation of existing basement space, as well as for any new space added to the building. These new mechanical loads will require an addition to the area assigned to mechanical equipment as well.

In general, the existing system by today's standards seems quite adequate for general library stack and storage areas, but modern requirements and technological changes indicate study and

general public or work spaces be handled in a more sophisticated way. These issues and the impact of adding space should be carefully analyzed by mechanical engineers during the projects's preliminary design phase.

Electrical Systems

The lighting is provided by fluorescent fixtures and seems adequate for a library environment. Originally the building had an enclosed plastic luminous ceiling system which was unventilated. This caused high temperature buildup, and consequently many lighting ballast failures. Most of the luminous ceiling system has been replaced by an open egg-crate lay-in grid thus solving the problem of overheating. Original ballasts for the light fixtures were instant start, class D type and are being replaced as they fail or cause problems. New ballasts are of the rapid start type.

In any addition it will be a concern to implement new lighting that is compatible with the existing system. Replacement of the entire system to a more economic one would be ideal but costly. Further study and life cycle cost analysis should be made during design.

The power service for the building seems to be more than adequate; recent tests indicate the system is approximately 70% loaded, thus allowing for a 30% increase in building load. A more detailed evaluation of the upper floors and mechanical spaces is recommended.

Life Safety Issues

Physical Egress

The building has three stair cases which, in general, provide ample egress from each floor. There is a tendency in this facility to crowd the required 44" corridor space with tables, chairs and storage cabinets. In several cases, egress space is limited to as little as 32". Such problems will be easily corrected in a library with ample space for storage and study.

Handicapped Accessibility

In 1984, several of the building accessibility deficiencies were addressed. A new elevator car was installed, entrance doors were modified, and selected toilet rooms were modified. The building is at this time accessible, but the fact remains that the elevator is not easily available to the aged or handicapped. Any new addition or remodel should include a public elevator system to give the open portion of the library more direct and obvious accessibility.

Emergency Lights

Battery operated emergency lights are provided in the existing facility stairwells, but historical review of such systems suggests that the maintenance of these systems is costly and often neglected. There are no emergency lights in general areas. It is strongly recommended an emergency generator be installed in a building of

Fig. 18. Overcrowding leads to code violations such as the encroachment of seating into the required 44" egress corridor.

this size; such a generator would be directly hooked to selected light fixtures for easy exiting in case of power failures.

Fire Systems

A fire alarm system consisting of pull boxes exists in the building. However, no smoke or heat sensors are included, and there is no annunciator in the building. No fire suppression system exists.

Asbestos

Asbestos continues to be a concern in all remodeling work across the country. The university asbestos team has evaluated the basement space of the library, and certain piping has been found to be insulated with an asbestos material. Removal of known asbestos will be a significant cost, easily in excess of $100,000.

Site Evaluation

If a radius of 1,000 feet is drawn from the library entrance, the circle formed includes all college offices and all major concentrations of classrooms and student activity. Only Music, Industrial Arts, Home Economics and Agricultural Engineering fall outside this circle, a five-minute walking circle. A more central location would be difficult to achieve should the library be moved. The university's Long Range Planning Guide suggests a plan of infill architecture be followed in the next twenty years and the existing infrastructure and building space available make a goal of 12,000 students very attainable. This goal fits well with the predicted university enrollment growth and suggests the present library location is not only good today but will serve well for the duration of the planning period.

An evaluation of the existing building site shows the library is located at the junction of two major pedestrian corridors. The south side of the library faces the University Mall corridor that is currently being developed between Line Street and Rayburn Avenue. The east side of the library, and its main entrance, faces the major north-south mall running from Upham-Gault residences to Memorial Gymnasium. The intense use of these two corridors prevents any serious consideration of a building extension in either the south or east directions. However, it might be possible to extend basement level space under the walking mall and, in so doing, provide access to the highly used University Classroom Building. To the west the library faces Rayburn Avenue with an eighty-foot right-of-way. An extension of approximately sixty feet would be possible in this direction. The window wall on the north of the library faces Renfrew Hall with approximately one hundred feet of lawn between buildings. No specific guidelines are set to limit the development in this direction, but careful evaluation will be required in the design process. A pedestrian corridor at this location will likely be warranted; however, available space will still allow an extension of the library about fifty feet beyond its present building line.

Fig. 1. Relationship of library to other academic buildings

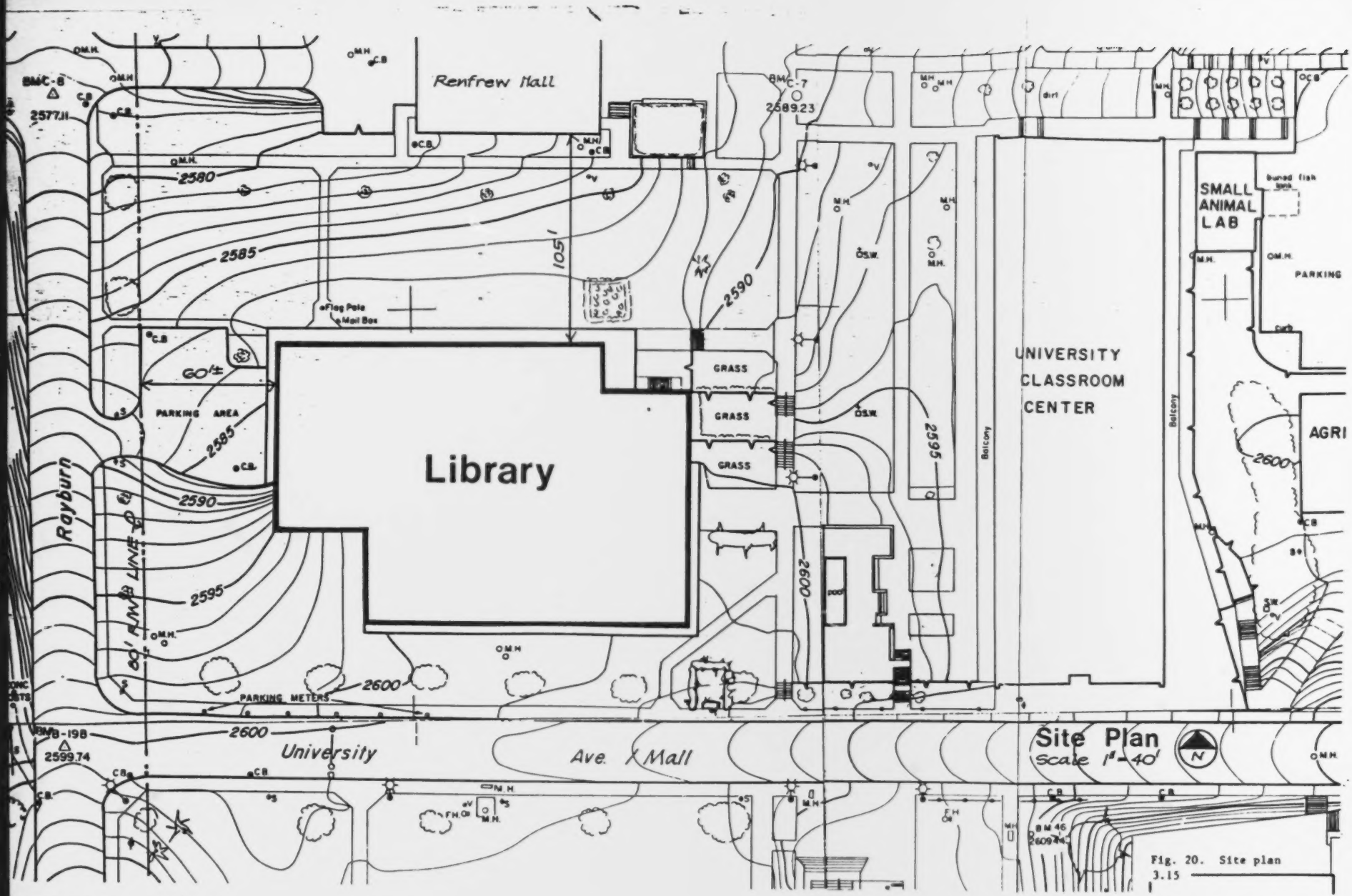


Fig. 20. Site plan

3.15

Current Issues and Trends 4

Fig. 22. The Washington State University library provides an online catalog alongside the traditional card catalog.

Fig. 21. Electronic technologies have drastically altered the manner in which libraries deliver services.

AUTHOR TITLE CATALOG

Chapter 4

Current Issues and Trends in Library Operations

There is a substantial body of literature dealing with issues and trends in academic libraries. The purpose of this chapter is to review some of these issues and trends together with their implications for the University of Idaho library.

Areas discussed in this section include:

1) Growth
2) Population and Use Changes
3) Electronic Technology
4) Information Proliferation and Access
5) Organizational Philosophies.

Growth

How large will the collections be in 20 years? How many staff will the library employ? How large will the enrollment grow?

The library building, first occupied in 1957, was planned for 20 years of growth. It was sized for a book capacity of approximately one-half million volumes, for a projected staff size of 30-35, and for a student enrollment that would reach approximately 4,500-5,000 students (1,100-1,250 seats).

Tables 4, 5, and 6 below illustrate increases well beyond the planners' original projections. The growth of collections, staff and readers at the present time far exceeds the library's planned capacities. Projecting needs 20 years into the future further dramatizes the magnitude of the space need.

TABLE 4

1957 DESIGN, 1985 ACTUAL AND 2005 PROJECTED LEVELS

COLLECTIONS[a]

Area for Collection	1957 Design Volume Capacity	1985 Actual Volumes	Over Capacity Difference	Total 2005 Projected Volume Need
Book Storage #1	51,300	69,875	18,575	0
Book Storage #2 (now active use area)	47,100	0	(47,100)	0
Basement Storage	0	40,000	40,000	275,000
SUBTOTAL	98,400	109,875	11,475	275,000
Humanities Reading Room	94,650	134,258	39,608	
Social Sciences Reading Room	114,300	178,306	64,006	
Science/Technology Reading Room	114,300	162,526	48,226	
SUBTOTAL	323,250	475,090	151,840	697,500
U.S. Government Documents	78,000[b]	140,000[b]	62,000	200,000[b]
TOTAL	499,650	724,965	225,315	1,172,500

[a] Excludes special collections, maps, microforms.

[b] These figures are expressed as volume equivalents, not as numerical volumes and account for the difference in total collection size.

TABLE 5

1957 DESIGN, 1985 ACTUAL AND 2005 PROJECTED
READER LEVELS

Area	1957 Design Reader Stations	1985 Actual Stations	Amount Fewer/ Difference	2005 Projected Reader Stations
Reserve Reading Room	216	142	74	
Humanities Reading Room	210	163	47	
Social Sciences Reading Room	271	159	112	
Science/Technology Reading Room	240	138	102	
TOTAL	937	602	335	1000

TABLE 6

STAFF LEVELS

1957 Full-time Staff	1985 Full-time Staff	2005 Projected Full-time Staff
25	51	80

An average annual acquisition rate of 20,000 hard-copy volumes would increase the size of the subject divisions by 400,000 volumes over the next 20 years. Total hard copy collections will reach a conservative level of 975,000 volumes in 2005. U.S. government documents currently stand at 440,000 volumes plus 116,000 volumes of microfiche. The Government Printing Office estimates over the next 20 years the University of Idaho regional depository will increase by slightly more than 40 percent. Total U.S. government documents will reach nearly 800,000 volumes. The map collection is expected to grow to 185,000 maps by 2005. Special collections may reach nearly 50,000 volumes, and the microform collection is expected to increase from 1,293,411 pieces, or nearly 120,000 volume equivalents to over 500,000. In conclusion, the collection

is likely to grow from its total 1986 level of one and one-half million volumes to two and one-half million volumes by 2005.

Reader stations have been reduced to 600, and fall far short of meeting the present and projected need. A conservative enrollment projection based upon a 1-1/2 percent rate of increase over current levels indicates the UI may easily reach 10,000-11,000 by 2005. Ten percent of that enrollment, or 1,000 reader stations, should be accommodated in the library.

Staff levels are currently at 51. Over the past thirty years, staff numbers doubled. A conservative increase to 80 is projected for the next 25 years.

Table 7 summarizes the space needs that result from these growth projections.

TABLE 7

UNIVERSITY OF IDAHO LIBRARY
EXISTING SPACE AND PROJECTED NEEDS

TYPE OF SPACE	EXISTING BUILDING NASF, YEAR 1985		PROJECTED NEEDS NASF, YEAR 2005	
Library Functions				
Stack Space	27,941		46,500	
Reader Space	13,881		29,900	
Staff Space	12,652		19,000	
Other Space	15,235		18,900	
Documents		6,926		7,200*
Maps		2,070		3,500
Microforms/Reserve		1,132		1,600
Minicomputer Room		0		500
Public Computer Terminals		0		1,100
Special Collections				
Staff and reader space included above				
Lobby-exhibit		0		500
Stack		1,491		1,400*
Card Catalog		751		100
Periodical Area, Seminar Rooms		2,865		3,000
Ground Floor Storage	3,597		0	
SUBTOTAL	73,306		114,300	
Basement Storage	14,112		20,446	
TOTAL--LIBRARY FUNCTIONS	87,418		134,746	
Non-Library Functions				
Postharvest Institute for Perishables Information Center	312		312	
Campus Post Office	1,444		0	
Soils Storage--Basement	3,209		0	
Physics, Theater Arts Storage--Basement	3,125		0	
TOTAL NON-LIBRARY FUNCTIONS	8,090		312	
TOTAL BUILDING--NASF	95,508		135,058	
TOTAL BUILDING--GSF	121,285		180,285**	

* Compact shelving reduces the space needs.

**59,000 GSF of new space is needed.

Population and Use Changes

Who are the patrons of the library now and for the future? What use patterns characterize the library today and will characterize the library of the future?

Not only are there a greater number of students attending the university and more patrons using the library's services, but the user population is changing. University library patrons are now found throughout the state and region. The computer links the library with the resident instruction centers and agricultural experiment stations from Coeur d'Alene to Tetonia. Library services are available in widely scattered regions of Idaho. Cooperation in the Western Library Network has extended the library's collections to member libraries throughout the region. As a WLN member institution, the University of Idaho has a responsibility to maintain its facilities and services for a much broader patronage than is located on-campus.

The university is placing increased emphasis on attracting and retaining academically superior students from the state and region. Such emphasis is exemplified by the recently developed Honors Program which provides expanded opportunities for a group of exceptional students. Moreover, disciplines represented in the newly revised core curriculum have strengthened the undergraduate curriculum and are providing greater opportunities for students to broaden their general knowledge, skills, and experiences. The library plays a significant role in carrying out these kinds of programs. Greater emphasis on student writing and research has increased the demand for library services.

The University of Idaho is the state's research institution charged with the primary responsibility for granting the Ph.D. degree. The university is dedicated to attaining a more broad-based research reputation. This goal is possible only if supported by stronger library services and facilities. Inseparable from the university's research mission is its graduate program. By updating its curricula based on input from agencies, business, and industry and by providing greater access to information via library programs, the university will strengthen the faculty and student body and bring greater recognition to the university and the state.

The majority of the university's clientele will continue to require the kinds of in-person library services that have customarily been provided. The population of users now, and for the next 20-25 years, will have expanded expectations and will be technologically more sophisticated than in the past. To remain viable, the library must respond both to technological change and the attendant expectations of its changing clientele.

New program needs have emerged and new technologies have required substantial changes in the 1957 building scheme. Not only is the amount of present space clearly inadequate to accommodate the growth of the library, but needs associated with its entrance into the age of technology, with electronic equipment now central to

the daily operation of the library have not been met. After twenty-nine years, the quality of space for collections storage, reader areas, and staff must be upgraded. Librarians have increased their interaction with patrons, prompting a need to consolidate certain functions and locate them in more publicly accessible areas. Provision of more efficient workspace is important to increased productivity and changing roles of library staff.

These changes in use imply a number of needs for the university. In the future it will be important to: provide an ample variety of reader stations for students, focusing upon spaces for patrons using the services and resources of the library; find alternative space for non-library related uses currently housed in the library; continue to strengthen library acquisitions in the areas singled out in the role and missions statement; where feasible, acquire collection materials in alternative space-saving formats such as microform, laser disk, film and electronic media; develop a variety of types of patron areas for group and individual study; and change and expand services to accommodate developments brought about by needs of off-campus patrons.

Electronic Technology

Although there are those who predict that information in electronic form will almost totally supplant the printed page by the year 2000, it seems far more likely that print material will continue to co-exist with information in electronic form for at least the next 20 years. In other words, technology will not render the traditional academic library obsolete, but rather will, if properly and appropriately applied in timely fashion, expand their capabilities.

The University of Idaho library has been physically and financially restricted from taking advantage of a variety of developments in electronic communications and information technologies.

Online Catalog

The library's public catalogs and internal operations are not yet fully automated, and because of present restrictions the library can not yet deal effectively with the huge quantities of information available in a variety of new electronic forms.

The library is nearing the completion of retrospective conversion (conversion of materials listed in the card catalog to the machine readable form). It is hoped that the conversion can be substantially completed within two years. The next step in the process will be the development of online catalog and circulation systems. Implementation of these systems is based on a number of advantages:

1) No need for the user to be within the confines of the library building to determine if a book, journal, etc., is held by the library.

2) Easier determination of the material's location (in storage, at bindery, etc.) and whether it is available for check-out.

3) Increased circulation--online systems installed in other libraries have had the effect of increasing library circulation, in some cases doubling it.

In the future, there could be an online catalog of the holdings of all the academic libraries in the state. This catalog could be accessed from each of the institutions, and if coupled with an appropriate delivery system, could make more efficient and effective use of the resources of the state of Idaho. The ability of institutional libraries to access the database readily to determine if specialized or expensive works are available could have a significant effect on acquisition decisions institutions make.

Automation

Libraries began to adopt automated processes in the 1960's mainly to assist with administrative functions. In the 1970's, many libraries formed cooperative networks. Although these networks were originally set up to handle technical services processing functions, they now provide databases for shared cataloging, interlibrary loan locations, and for communications to facilitate sharing bibliographic resources. Currently libraries are using mini and micro computers to develop sophisticated local systems while maintaining membership in the large network. The mini and micro computers are not only the basis of sophisticated processing systems, but they also provide increased information retrieval through online texts, online bibliographic databases and online public access catalogs. It appears that the principal future impact of new technology will be on public and reference services rather than on technical services as has been the case in the past. Online public access catalogs provide powerful new subject and word search capabilities, thus increasing access to collections.

The WLN

The University of Idaho is one of 125 member libraries in Washington, Oregon, Alaska, Montana and Idaho in the Western Library Network (WLN), a bibliographic database with four million catalog records. The bibliographic records provide the basis for interlibrary loan searching. Machine readable catalog records are generated, and the product is a computer output microfiche catalog (COM) that is gradually replacing the traditional card catalog. Although the library receives a COM of only its holdings that have been entered into the network, library staff can "call up" entries on WLN terminals or consult WLN resource directories to determine which libraries hold the materials needed.

The impact of membership in the WLN is significant both in terms of services, costs, and space requirements. The library currently has 14 WLN terminals scattered throughout the building. The University

of Idaho library joined the Washington Library Network (WLN; Western Library Network as of July 1, 1985) in July 1979.

The purposes of the network as listed in 1979 were as follows:

- improve library response to information needs;
- facilitate resource sharing among libraries of all types;
- reduce unnecessary duplication of effort among libraries;
- provide automated support for all library operations;
- improve accuracy, consistency, and completeness in bibliographic records;
- provide for interface with other regional and national networks; and
- allow flexibility for system growth, new types of participants, and changing priorities.[5]

Although these purposes of WLN cover a wide range of functions, the University of Idaho library joined the network primarily to better handle technical processing functions. The UI had found a) maintaining the traditional card catalog was a highly labor-intensive process; b) the card catalog was a complex tool, and the larger it became the more difficult it was to use; c) the Library of Congress was going to adopt in 1981 new cataloging rules which mandated extensive changes in catalog subject headings and entries.[6] Membership in the WLN addressed all of these problems. Necessary cataloging changes were easily effected by the computer in the bibliographic database and expansion of the card catalog was no longer necessary since COM (computer-output-microform) catalogs could be used. Network membership provided a cost-effective means of gaining entry into the field of library automation.

Members of the staff have indicated that WLN functions will change in the future as institutions develop their own local systems. WLN's future role is likely to focus on the need to share cataloging and catalog maintenance based on comprehensive and consistent authority control; shared collection development; gateways to other systems, and databases; interlibrary loan and interinstitutional information switching in a broad sense, access to entirely new types of databases formed by government agencies; and the distribution of data and software to local systems.[7]

There is already a project underway to provide access to other systems. The Council of Library Resources and the Library of Congress have initiated the project known as the "Link System Project." A major goal of the project is to ensure that WLN, and other networks will share "authority" and "bibliographic" records. These linkages would substantially increase interlibrary loan possibilities, as well as facilitate shared cataloging.

The importance of University of Idaho's membership in the WLN is indisputable. Participation in a large, regional association of libraries has allowed the university to join forces with over a hundred libraries to deliver services to the campus population, off-campus sites and the state in general.

Specific benefits of membership include: easy access to over 4 million titles listed in the WLN; shared cataloging and catalog maintenance; cooperative collection developments; links with other regional networks; and availability of data and software.

Since joining WLN in 1979, the library has increased the number of items loaned and borrowed through interlibrary loans. Currently the university loans three items for every item borrowed. Through interlibrary loan, the library provides a valuable public service acting as a resource center for public libraries throughout the state. In fiscal year 1984, 3,087 items or 34% of the total amount loaned was sent to Idaho libraries. The U.S.D.A. through the Western Forest Information Network (WESTFORNET) in Idaho and the Northwest was the second largest recipient of items loaned through interlibrary loan with 26% of the total.

Local Systems

The advent of mini- and micro-computers, and especially turnkey systems (computer hardware and software), have made the development of local systems for handling such processes as acquisitions, accounting, circulation control and serials management cost effective. The library currently conducts these functions manually and as separate operations. With the completion of retrospective conversion, implementation of an integrated library system (ILS) will become a high priority.

Digitizing

Digitizing equipment may soon lead to an increase in the transfer of information to other institutions and to off-campus sites. The University of Idaho, in conjunction with the other land-grant institutions in the Pacific Northwest, submitted a proposal entitled "Library and Information Resources for the Northwest" (LIRN). The proposal is being funded by the Fred Meyer Charitable Trust in Portland and is in its final review stage. This program is designed to demonstrate projects of innovative information delivery. The objective of the project is the timely provision of textual and graphic information in digitized format to the widest possible group of users, which in theory would be anyone with a microcomputer and modem. One of the problems with the current interlibrary loan system is that immediate access of information is not available since items are frequently mailed. Telefacsimile transmission has not been popular, nor cost effective to date, since transmission is slow, and the information must be manually fed into the transmitting machine. Now that funding has been approved, microcomputer and optical scan equipment is being installed at the five land-grant institutions to form a network for the rapid transmission of digitized information. It is estimated that the equipment will transmit digitized text computer-to-computer information at the rate of eight seconds per page and digitized images at the rate of 35.5 minutes per page. In addition to being able to print out information received, clients will be able to edit, upload or download to other machine readable files all or part of the information received.[8]

Assuming information delivery via digitization is shown to be cost-effective, the program could be expanded to other academic institutions in the state of Idaho and to the university's agricultural experimental stations and off-campus sites.

Online Databases

Online databases, both bibliographic and source, provide another way of increasing availability of information to library users. Currently these databases supplement rather than supplant hard-copy volumes, and it is not clear that they will supplant hard-copy literature during the planning period for which this study is being done. Some library literature has suggested that the book is a relic of inefficiency and, in the future, information retrieval will be handled without libraries or books. However, this certainly has not happened; the number of books published in the United States in 1980 was more than 5 times the number published in 1960.[9]

Online databases were started in the mid-1960s; the U.S. government was an early producer of databases in education and medicine. Commercial vendors of online databases surfaced in the early 1970s, but only recently has the number of databases and users increased dramatically. The annual growth of the 29 leading online search services exceeded 40% the first nine months of 1984. In May 1985 a total of 2,453 online databases were developed by 1,189 database producers. These databases were offered on 362 online services. In 1979, 400 online databases were offered on 59 online services.

The majority of online database services are marketed for end-user (the patron requesting the information) rather than for librarians; although, of course, librarians frequently access the database. The databases include, for example, full-text of newspapers, periodicals, stock and investment information, and the New York Times Information Bank. They are accessible by anyone with a microcomputer, account number, and funds.

The costs of databases for full-text journals often exceed the hard-copy annual subscription rate. Moreover, although the text of these journals may be online, photographs and color graphics are not. Thus, online journals will probably supplement rather than supplant today's library materials. The databases most frequently utilized by University of Idaho library users are those containing bibliographic and numerical data. Access to these databases is not inexpensive. Online connect time rates may vary from $15 per hour to over $100 per hour. The offline print rates and the online type or display rates range from a few cents per record to $55 per record for BI/Data Forecasts.[10] For some smaller libraries it may make economic sense not to subscribe to expensive, seldom-used, printed indexes. Rather, it could be cost-effective to provide an online search when requested and change the materials budget to a materials and access budget. The latter has been proposed at Texas A & M University.[11] Without such a budget change at the University of Idaho, it seems unlikely that online bibliographic indices would replace hard-copy volumes.

Online database searching is already provided to the agricultural experiment stations in Idaho. The library and experiment stations are connected by telephone link. The library is also connected with DIALOG, an online bibliographic vendor. By using a switch mechanism the experiment station researcher can view a search to determine if desired information is being obtained at the library. Since the hard-copy indices and abstracts are not available at the stations, the online search provides a valuable service to the researcher.

The proposed LIRN project discussed above may aid in the services offered to off-campus sites. Results of online searches could be rapidly transmitted in machine readable form to clients at remote locations. Clients could print out data or use it in machine-readable form.

Implications

Although automation will substantially change the way a library operates and improve services to both its on- and off-campus users, it is unlikely it will have much impact on acquisition of materials in a large research library. Online journals will probably supplement those presently available, and online bibliographic databases may supplant some hard-copy volumes. Interlibrary loans will undoubtedly increase since easy access to little-used materials decreases the need for each library to acquire such materials.

Planning for automation should be included in any analysis of future space needs of a university library. The degree to which automated technology can be incorporated into the university library and the libraries in the state of Idaho is dependent upon available funding.

The university has concluded the high cost of providing space to house the collection, together with the exponential growth of knowledge and availability of new technologies at reasonable costs, warrant an increased reliance on electronic communications and information management systems to help solve the library's space needs and to enhance its level of service. Consequently, it plans to continue to implement a comprehensive program for using computer and communications technologies to add a powerful new electronic dimension to traditional collections and services, to provide the physical facilities to house such a comprehensive program and staff to support the change. It will be necessary to accomplish the following: Complete the automation of the public catalog, thereby increasing access to collections on and off campus; continue active participation in the Western Library Network (WLN) as a means to share in the areas of cataloging, collection development, information retrieval, access to software; and implement an integrated local system for handling technical processes, e.g., acquisitions, accounting, online catalog, circulation control and serials management.

Information Proliferation and Access

The library must deal with huge and ever increasing quantities of information. In the technological future, this information will appear often in electronic and non-book forms, necessitating new ways of controlling it and of providing access to it.[12]

In view of the information explosion, what level of access can and should the university library provide to meet the needs of its constituents, and what resources and options are available to do so?

Although many routine needs of most library users will be met from the library's own collections, more and more information--particularly the occasional, specialized kinds--will be available only outside the library building. Consequently, the measure of the library's success in fulfilling its mission of support to curricular and research programs will be not only the size and quality of collections, but also its ability to provide access to sources of information, largely by electronic means.[13] As DeGennaro observes, "Users will no longer be limited to what a library has, but to what it can provide."[14] For example, it is likely a significant percentage of statistical and directory data will be available only through computer terminals, as will bibliographic data. Likewise, it is possible more and more scholarly journals will be published only in electronic form. Thus, providing electronic access to information will become an even more important activity of the library than has previously been the case.

As a direct result of the information explosion and the impossibility of physically housing all information used by a university, institutions are looking to new policies and practices to address the space needs facing libraries. Differentiating levels of access to collections is often necessary. Age, value, and frequency of use will help determine the level of access required for collections held by the library. Making distinctions in access levels for library patrons already allows for significant space efficiency. Such practices should be continued; access to information not physically housed in the library must be expanded. Cooperation, collaboration, and networking can extend access well beyond the Moscow campus. Continued membership in WLN is a key element in the cooperation.

Cooperation within Idaho and between Networks

At the present time, Washington State University, Boise State University, and Lewis-Clark State College are members of the WLN, as are the State Library and numerous public libraries throughout Idaho. There is, thus, a great deal of cooperation among these libraries. Idaho State University is a member of RLIN, (Research Library Information Network), which in the past has tended to limit the extent of its cooperation with other state libraries. Boise State has investigated the potential of an individual system and may limit its use of WLN to cataloging. The question of links between libraries outside of the regional networks has not been fully explored. It is hoped that in the future the three large networks (WLN, RLIN, OCLC)

and the Library of Congress will be able to share "authority" and "bibliographic" record. The holdings of most university libraries would thus be available for access and interlibrary loans to most other libraries.

Cooperative Collection Development

Cooperative collection development and management provides an important means of enhancing existing collection strengths while minimizing storage space. University collections thus can aspire to quality rather than quantity in an era of limited funds and steadily increasing publication output. Cooperative collections are especially useful in reducing acquisition of little used materials. An institution's acquisition and weeding policies in this way can be based in part on its own collection strengths and on strengths of other libraries.

At a conference held in Chicago in April, 1985, 180 librarians, representatives of higher education, and library agencies from forty states and Canada met to build a model statewide plan for coordinating library cooperative collection development. One example of this trend being promoted in the northwest is a collection assessment project, one part of the LIRN program (Library and Information Resources for the Northwest) funded by the Fred Meyer Charitable Trust in Portland. The result will be the Pacific Northwest Database. This program, which includes participating libraries in Alaska, Idaho (including the University of Idaho), Montana, Oregon, and Washington, will foster increased information access. This project is in line with the recommendation of the 1984 Accreditation Report calling for the university library to "consider developing a plan for collection analysis to determine strengths and weaknesses in support of the University's graduate education and research programs."[15]

The Washington State University library, eight miles from Moscow, offers resources that effectively supplement the University of Idaho collections. Cooperation with WSU and with other libraries in the state of Idaho augments the UI's library collections, access, and services and helps satisfy information needs of the university's constituents.

Closed and Dense Storage System

Currently 20% of the hard-copy (monograph) volumes comprising the library collection are housed in closed stack (storage) areas. Closed stacks require patron assistance to access materials but require less space than open public accessible stacks. The U.S. government documents collections and special collections are housed in closed stacks for control.

Based upon frequency of use, more materials could be placed in storage/closed stacks provided their location were easily discernable via an online catalog. Retrieval within a reasonable time frame must also be guaranteed. The primary advantages of closed collections are control and space savings. Denser shelving arrangements than are allowable in public, open stack areas can

increase significantly the number of volumes per square feet that can be housed.

Some space saving in the existing library has occurred in closed collection areas by using narrow aisles; however, the potential exists for further reducing square footage requirements through compact shelving ins torage and closed collection areas. Completion of a public online catalog will make use of compact shelving arrangements more palatable and feasible. A further discussion of this topic is found in the section on options.

Alternatives to Printed Formats for Collections

It is likely many library materials in the future will be available and accessed in non-typical, non-printed formats, such as optical disks and computer-generated graphics. However, it is important to realize that although information provided by these media may reduce paper copies, the equipment needed to use the new technologies may require more space than the printed copy.

The director of the Census Bureau stated at the 1985 American Library Association (ALA) Conference that cartographic material from the 1990 census would be available only in electronic format; the specific format has not yet been determined. From the 1980 census the University of Idaho library obtained 5,000 of approximately 100,000 block maps. It is possible, according to the information obtained, that software to read computer graphics may be available to the U.S. government depositories such as University of Idaho library. However, the library will be required to provide hardware. In addition, the United States Geological Survey is beginning to publish digital cartographic maps. Some depository maps may be published only in that manner; again the library may be required to provide appropriate equipment to use material in this format.

Optical storage technologies are providing a new dimension in information access. Optical storage technologies include analog videodisc (AV), digital optical disc (DOS), and digitally encoded videodisc (DEV).

Analog videodiscs have been in use several years for distribution of movies. Analog videodisc data are recorded, stored and displayed in a continuous fashion. Other media include books, slides, pictures, and phonograph records and may be stored on these discs. The cost of replicating a disc is relatively low but the data are usually degraded with each generation (copy) removed from the original storage medium.

Digital optical discs provide an excellent storage mode that accommodates the eventual manipulation of data. Digital data are characterized by discrete rather than continuous data. Replication of a digital optical disc is expensive; it requires a file copy command to be executed by a person and it can produce only one copy at a time.

The digitally encoded videodisc (DEV) combines the best features of analog videodiscs and digital optical discs. This high density, optical storage system provides a cost effective means for digital storage of visual and auditory images. It takes advantage of low replication costs of analog videodisc and digital character storage capabilities of the digital optical disc. The DEVs have remarkable storage capacities. One DEV holds as much information as ten reels of magnetic tape, 2,500 microfiche cards, or 500,000 pages of text.

Use of the discs presents great potential storage space savings. This, however, is offset somewhat by the amount of equipment required to use videodiscs. This equipment includes videodisc players, personal computers, color monitors and printers. Moreover the cost of producing the discs is still relatively high, and it is not yet certain how copyright laws will affect the reproduction of copyrighted material onto discs and the copying from one disc to another. There is also a problem of discs produced by different vendors not being machine compatible. It is possible that the number of stations needed to use the discs from various vendors might substantially reduce the optical disc space savings.

The primary advantage of the bibliographic videodisc over the online system is local control with known costs. The costs for the hardware and information subscriptions will be fixed just as are the subscription rates for the hard-copy volumes. Moreover, videodisc systems like the online systems allow searching by key word or phrase from abstracts and indices from a number of years. There will be no telecommunications charges and the user at no additional expense can examine the databases.

Microforms

Microforms were heralded in the late 1960's as an answer to space problems confronting libraries. They have served as a partial solution but are not the panacea they were once thought to be.

Microforms have resulted in substantial reductions in space needed to house old newspapers. Microforms are used also to create "permanent" copies of popular journals. Unfortunately, however, these copies tend to deteriorate after thirty to forty years, and re-microfilming is quite unsatisfactory as the letter images continue to degrade.

Microform use for large amounts of text is not common. Reasons for this include: frequent location of microforms in far away parts of a library are not conducive to microform use; the microforming process has not developed a level of sophistication allowing for good reproduction of color photographs, tables, and graphs.

Microforms will continue to be used for items infrequently used (a number of U.S. Government Documents are being printed on microfiche), for reprint editions of hard-volume copies no longer published, and for extremely bulky items. Optical disks may replace microforms as the storage medium for certain types of items.

Organizational Philosophies

Since its beginning the University of Idaho has adhered to the policy of a single central library. Since 1957 its internal organization has been according to subject area divisions: humanities, social sciences, science/technology. The bulk of the collections are openly accessed (open stacks) by all student, staff, and faculty possessing proper identification. Cards are issued to non-university persons (WSU students, Idaho citizens) on a controlled basis. Collections closed to the public (closed stacks) include the U.S. government documents collection, special collections, and over 120,000 volumes in closed storage areas. Retrieval of these materials is provided upon request.

Development of branch libraries on larger university campuses has frequently occurred; expansion can take place simply by adding new branches. The university has discouraged the development of branch libraries in order to keep materials easily accessible by all patrons, to keep costs down, and to maintain more efficient control of resources.

At a certain level of enrollment or in response to high percentages of graduate student and research demand, some institutions opt for graduate and undergraduate libraries. Such an approach does not appear feasible for the University of Idaho. A single library facility and staff can better accommodate the current and 20-year projections of patrons and materials. This can be done without costly duplication of resources in a single facility. The university may reach different conclusions when it needs to expand again in 20-25 years.

Three separate divisions characterize the University of Idaho library organization: humanities, social sciences, and science/technology, with each division housed on a separate floor. The U.S. government documents collection constitutes a fourth, semi-independent area. It is located adjacent to the social sciences collections. Special collections constitutes a fifth semi-independent area. Different use demands and growth rates of the three divisions, the documents collection and special collections have affected or been affected by space. For example, the science/technology library with the largest collection of the three divisions has been forced to remove a larger percentage of its materials to storage and to reduce proportionately more seating due to its confinement on the third floor. The documents collection, a regional depository serving the entire state of Idaho, has expanded on the second level to accommodate the variety and number of book and nonbook formats comprising its closed collection. Its growth is severely constrained by the space it occupies and the competing requirements of the social science collection. The building structure restricts further consolidating stacks and map cases.

Bound periodicals are currently housed in open stacks together with monographs (books). Current periodicals of either form normally do not circulate out of the building. Differing use patterns may signal need of alternative, specialized periodicals/serials space. Separate reference areas are associated with each divisional library. Reference librarians in four separate areas perform similar public service functions. Centralizing the reference function could prove to be more effective and efficient.

Implications

The university proposes to maintain a strong central library for the campus and to organize internal library services for optimum flexibility, efficiency, and access.

Further, to achieve higher levels of efficiency it may be valuable to: concentrate reference activities, including documents and maps, in the most public accessible areas and eliminate separate reference divisions; to consolidate other high use areas such as periodicals, newspapers, microforms, computerized database searching, and the browsing room for higher visibility and accessibility; and to rearrange the book collection over the remaining three levels in existing and new space into one alphabetical, call number sequence.

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Fig. 23. Overcrowding in U.S. government documents area

Chapter 5

Collections

Introduction

The library's collection of materials is its essence. National accrediting agencies and associations of libraries use collection size as one measurement of library strength. Satisfactory provisions for the use and storage of materials that comprise the university's collection must be made. Collection materials are a basic resource for the students and faculty of the University of Idaho campus in Moscow, and their availability is important to researchers at the agricultural experiment stations throughout the state, and to University of Idaho students studying at off-campus sites. The materials are also important resources for students of other Idaho universities and patrons elsewhere in the state through interlibrary loan. The University of Idaho library maintains the largest collection in the state, and approximately 80% of its interlibrary loans are made to other libraries in Idaho.

The library's collections are divided into five primary components: 1) monographs and bound journals, 2) U.S. government documents, 3) maps, 4) special collections, and 5) microforms. This chapter will examine the size of each of these collection components, existing problems with the housing of the materials, projected growth for each of the five areas, and the space needed to house the collections for the 20-year planning period.

Subject Libraries
Monographs and Bound Journals

Since 1957 the University of Idaho library has been organized into subject libraries, a method of classification that became popular after the Second World War. In recent years this approach to housing the collection has been less prevalent as many universities have discovered that this system limits the number of volumes that can be housed in open stacks. Even more importantly, the alternative to subject library organization--a centralized reference system--can increase the level of service provided and improve the efficiency of operation.

The floor plans included in this report show locations for the divisional collections: the humanities library on the first floor, the social sciences library on the second floor, and the science library on the third floor. The following table summarizes the space available for each of these three collections--for open stack areas, reference areas, and the areas for periodicals.

TABLE 8

DISTRIBUTION OF SPACE BY SUBJECT LIBRARY

Subject Library/Type of Space	NASF	% Existing Collection Space	1985 % Total Collection
Humanities/Stack	5,784		
Humanities/Reference	790		
Humanities/Periodicals	370		
Subtotal	6,944	26.6	25.9
Social Sciences/Stack	7,109		
Social Sciences/Reference	894		
Social Sciences/Periodical	586		
Subtotal	8,589	32.9	34.7
Science/Stack	8,387		
Science/Reference	1,568		
Science/Periodicals	627		
Subtotal	10,582	40.5	40.4
Total Space Devoted to Collection Housing:	26,115	100.0	100.0

Table 8 above illustrates there is more room for the science collection than for the other two divisional libraries. However, it must be noted that more space devoted to housing materials leaves less space available for readers. Only 63 reader seats are available in the science library compared to 113 in humanities and 103 in social sciences.

Table 9 indicates bound periodicals are not evenly distributed among the three subjects, nor is the rate of growth in terms of percentage or volumes the same from area to area. In fiscal year 1975 the humanities collection represented 26.9% of the total number of hard copy volumes; by July 1, 1985, this percentage had decreased to 25.9%. The social sciences collection represents 34.7% of the total; this percentage has not changed over the past ten years. The science collection continues to increase as a percentage of the total, matching the decline of the humanities collection. At the end of fiscal year 1974 the science collection represented 39.4% of the total hard copy volumes; at the end of fiscal year 1985 this percentage had increased to 40.4%. This growth pattern is more dramatic for the past twenty-five year period. In 1959, the science collection represented approximately

TABLE 9

ACQUISITION INCREASES 1974-1984
BOUND VOLUMES BY SUBJECT

	Books 7-1-74	Books 7-1-85	Number Increase	% Increase	Periodicals 7-1-74	Periodicals 7-1-85	Number Increase	% Increase	Total 7-1-74	Total 7-1-85	Total Increase	% Increase
HUMANITIES												
A Gen Works	2,750	3,590	840	30.5	10,133	12,451	2,318	22.9	12,883	16,041	3,158	24.5
B Phil, Psy, Rel	10,537	16,292	5,755	54.6	2,088	3,442	1,354	64.8	12,625	19,734	7,109	56.3
M Music	5,460	11,388	5,928	108.6	729	1,289	560	76.8	6,189	12,677	6,488	104.8
N Art, Arch	7,164	12,895	5,731	80.9	2,939	4,212	1,273	43.3	10,103	17,107	7,004	69.3
P Lang, Lit, Journ	44,065	67,491	23,426	53.2	4,106	6,714	2,608	63.5	48,171	74,205	26.034	54.0
Z Writing, Bib, Lib Sci	4,477	6,915	2,438	54.5	1,781	2,654	873	49.0	6,258	9,569	3,311	52.9
Subtotal	74,453	118,571	44,118	59.3	21,776	30,762	8,986	41.3	96,229	149,333	53,104	55.2
SOCIAL SCIENCE LIB												
C Aux Sci of Hist, Bio	1,315	1,989	674	51.2	183	425	242	132.2	1,498	2,414	916	61.5
D Old Wrld Hist & Geo	17,510	25,152	7,642	43.6	2,240	3,961	1,721	76.8	19,750	29,113	9,363	47.4
E New Wrld Hist & Geo	8,809	13,015	4,206	47.7	667	1,275	608	91.2	9,476	14,290	4,814	50.8
F US States, New Wrld Cou	7,859	11,397	3,877	49.3	1,526	2,213	687	45.0	9,385	13,949	4,564	48.6
G Atl, Geo, Anthro, Phys Ed, Sports, Games, Dncg	6,548	12,252	5,704	87.1	1,771	3,481	1,710	96.6	8,319	15,733	7,414	89.1
H-HJ Econ, Business	28,507	43,453	14,946	52.4	7,789	12,239	4,450	57.1	36,296	55,692	19,396	53.4
HM-HX Sociology	6,398	12,734	6,336	99.0	1,433	4,039	2,606	181.9	7,831	16,773	8,942	114.2
J Political Science	9,974	16,087	6,113	61.3	1,491	4,199	2,708	181.6	11,465	20,286	8,821	76.9
K Law	1,965	3,799	1,834	93.3	188	245	57	30.3	2,153	4,044	1,891	87.8
L Education	9,867	13,718	3,851	39.0	3,792	5,547	1,755	46.3	13,659	19,265	5,606	41.0
U-V Military & Naval Sci	850	1,786	936	110.1	317	511	194	61.2	1,167	2,297	1,130	96.8
Subtotal	99,602	155,721	56,119	56.3	21,397	38,135	16,738	78.2	120,999	193,856	72,857	60.2
SCIENCE & TECHNOLOGY LIBRARY												
Q Science, Math	38,379	62,615	24,236	63.1	28,543	49,112	20,569	72.1	66,922	111,727	44,805	67.0
R Medicine, Pub Hlth	3,854	8,304	4,450	115.5	4,126	6,941	2,815	68.2	7,980	15,245	7,265	91.0
S Agric, For, Wildlife, Vet Med	14,174	22,233	8,059	56.9	13,596	19,469	5,873	43.2	27,770	41,702	13,932	50.2
T Engrng, Manufactures, Home Economics	19,527	35,112	15,585	79.8	18,884	28,492	9,608	50.9	38,411	63,604	25,193	65.6
Subtotal	75,934	128,264	52,330	68.9	65,149	104,014	38,865	59.7	141,083	232,401	91,318	64.7
GRAND TOTAL	249,989	402,556	152,567	61.0	108,322	172,911	64,589	59.6	358,311	575,590	217,279	60.6

one-third of the total collection. Thus, in twenty-five years the 40.4% percent of the collection represented by science materials has increased by over seven percent. Differential growth of the various areas now calls for adjustments in the amount of space to properly house the collections. This must be accomplished without sacrificing other important library services.

Varying rates of increase can also be illustrated in terms of the number of volumes. In the ten-year period ending July 1, 1985, the number of hard-copy volumes in the library increased by 217,156 volumes. Table 10 shows the distribution of the growth.

TABLE 10

VOLUME INCREASE BY DIVISIONAL LIBRARY
July 1, 1974, to July 1, 1985

Divisional Library	Net Volume Increase
Humanities	53,104
Social Sciences	72,857
Science & Technology	91,318
TOTAL	217,279

For fiscal year 1985 the number of volumes added to the science collection was almost double the number of volumes added to the other two collections: 9,495 volumes in the science library; 4,878 volumes in the humanities library; and 6,881 volumes in the social sciences library.

The increase in the number of volumes and percent increase varies between monographs and bound journals. Between 1974 and 1985 more social sciences books (monographs) were added to the collection; although the percentage increase for the science collection was higher. The number of science bound journals added to the collection was more than twice the number of social sciences volumes and almost four times the number of humanities volumes. The increase in social sciences bound journal volumes, however, reflected the largest increase among the three divisions.

Therefore, it is clear that a number of factors determine space requirements of the collections. For each divisional library, the size of the collection, its distribution between monographs and bound journals, its level of currentness, and available space all help to determine the number and type of volumes housed in open stacks and the number housed in storage.

Table 11 summarizes the stack arrangements used in the various divisional libraries.

TABLE 11

HOUSING OF BOUND VOLUMES

Division	Number of Total Volumes 7-1-85	Number of Reference & Index Volumes	Number of Volumes in Storage	Number of Volumes in Open Stack	Volumes per NASF
Humanities	149,333	7,100	15,075	127,158	22.0
Social Sci.	193,856	6,505	15,550	171,801	24.2
Science	232,401	8,520	69,875	154,006	18.4
TOTAL	575,590	22,125	100,500	452,965	21.3

Two current problems with the housing of the collection are highlighted by the above data: 1) Quality of storage space and imbalance in storage of material form area to area, 2) overcrowding in stack areas.

Approximately 20% of the collection is housed in storage. The housing of items in a high-density storage arrangement can be cost effective, be acceptable to the user and can provide an appropriate environment for preserving the materials. The existing storage arrangements at the University of Idaho library do not presently meet these criteria. Phase I of the proposal to upgrade library basement space has been approved, and these improvements will be made in 1986-87. Upon completion the on-site basement space will be able to accommodate 275,000 volumes of less frequently used materials.

The science volumes in storage are currently housed in the ground floor book storage area. There is no additional space in this room for more materials. More public use of prime ground floor space can be made by relocating the stored items to upgraded basement storage, allowing development of this area for other public functions.

Those humanities and social sciences volumes currently kept in storage are also located in the basement. In its current condition this space has provided an unsuitable environment to house library materials. The level of humidity is too high due to the infiltration of water; lighting is insufficient to enable staff to secure and reshelve materials; other non-library materials are kept in the area, reducing the amount of space available for use by the library; and the book-lift to transport small quantities of library materials between the floors does not go to the basement level. All of these

features will be corrected with the completion of the basement upgrade approved in 1986.

Most of the items kept in storage are bound journals and back issues of serials. Placement of a wooden dummy on the open shelf indicates to the patron that an item is in storage. It could be argued that more monographs should be placed in storage; however, at the present time an individual would be unable to determine the item's existence or location by examining the items on the shelf. Under the current identification system, a wooden dummy can take as much room as the volume it signals being in storage. Unless a patron inquires at the loan desk, there is no alternative way to determine whether an item is in storage until the patron reaches the stacks and sees the wooden dummy. The microfiche catalog available throughout the library does not indicate whether an item is in storage. An alternative available to patrons to determine easily whether an item is in storage is the online catalog. The implementation of such a system will make it feasible to place a greater number of infrequently used items in storage.

To date requests for items in storage have been manageable. Table 12 summarizes the number of retrievals from the science storage area (ground floor) and the humanities and social sciences area (basement) during the last five years.

TABLE 12

NUMBER OF ITEMS RETRIEVED FROM STORAGE

Year	Number of Science Items	Number of Social Sciences and Humanities Items
1980/81	1,694	607
1981/82	5,087	823
1982/83	3,312	900
1983/84	3,758	960
1984/85	2,979	933

Although more and more items have been placed in storage the past five years, the number of recalls from divisional collections are not increasing. This may be attributed primarily to the fact that librarians have kept records of those items frequently recalled. In many instances these materials are placed back on the open shelves, and other less frequently used items are moved to storage. For example, between 1983/84 and 1984/85 there was a reduction of almost 800 recall requests from science storage or over 20% of the 1983/84 total. This reduction was a result of some geology and

chemistry journals being placed onto the open shelves and agricultural experiment station publications being stored in their place.

The data do not indicate whether one item in storage has been recalled five times or five items have each been recalled once. Fur purposes of discussion it is assumed that each recall is a separate, discrete item. In 1984/85 less than 1% of the total collection (3,912 recalls divided by 575,590 volumes) was retrieved from storage.

There is no objective way to determine whether the presence of an item in storage leads to reduced use of the item. However, there is some reason to believe that it does. Items in storage are unavailable for casual browsing. Individuals searching older journals, however, usually have a citation and generally do not "browse" to locate needed information. At the present time patrons are not allowed access into the storage areas to browse. Some patrons are not willing to wait for items to be retrieved from storage and decide that the items are not essential. The university is fortunate, however, in being able to retrieve items from storage in 15 minutes or less during most hours that the library is open. This turn-around time compares very favorably with that of other universities and colleges having remote storage facilities with turn-around times of 12 hours, 24 hours and even 48 hours.

The second problem with the current method of housing the collection is overcrowding. The number of volumes per square foot, i.e., the number of volumes per shelf unit, exceeds the acceptable definition of "working capacity." The Association of College and Research Libraries standards recommends the number of volumes per square foot based upon the size of the collection.[16] The greatest number recommended for an open stack area is 15 volumes per square foot. This arrangement allows for maximum efficiency.

Other authorities have suggested that the number may reach 17 if stack units 16" wide and aisles 30" wide are used.[17] A greater density is suggested for closed stack areas. For all three subject libraries at the University of Idaho the volumes per square foot currently exceed 15 or 17 volumes. When "working capacity" has been exceeded, as it has at the University, librarians and other staff members spend excessive time shelving and reshelving materials. At the present time crowded stack conditions make it necessary to place into storage one item for each new item placed on the shelf. Not only are the number of volumes per shelf too great for an efficient operation, but cross aisles have been filled in with stacks further increasing the volume density.

Although the statistics indicate the stacks on the science floor are less crowded than those on the other floors, in fact this is not true. Studies have shown the average science volume is substantially larger (wider) than the humanities and social sciences volumes.[18]

Monographs and Bound Journals and the Future

An increased emphasis upon graduate education and research demands access to a greater body of knowledge--to materials available in-house and through interlibrary loan. As recommended by the 1984 Accreditation Report, a certain amount of this material should be available in-house. Interlibrary loan,[19] where it may be necessary to wait days or even weeks for the material to be supplied to the university and the patron, is not always an acceptable substitute. In addition, while monographs are usually supplied free of charge, there is often a photocopying charge for journal articles obtained via interlibrary loan. Costs can become excessive.

While the University of Idaho library ranks relatively low in the total number of interlibrary loan items borrowed compared to other Ph.D. granting institutions who do not belong to the Association of Research Libraries (54 out of 86), it also ranks low in the total number of volumes in the library (67 out of 86) and gross volumes added 1983/84 (52 out of 86).[20]

It could be argued that in view of the university's changing role and mission toward research and graduate education and comparisons with other smaller Ph.D. granting institutions, an average annual monograph acquisition rate of 20,000 volumes should be increased. Changes in technology, however, support the 20,000 volume per year hard copy acquisition rate.

Technology, however, will make evolutionary rather than revolutionary changes in the way libraries conduct their business. Monographs, bound journals, and other print forms will not disappear during the next 20 years. New formats and new ways of accessing material will not replace hard copy library materials, but will allow for a new concept of growth and development.

The average annual 20,000 volume acquisition rate of the last ten years represents an ever smaller percentage of the library's existing collection and an ever smaller percentage of the accessible body of knowledge. The 20,300 volumes acquired in fiscal year 1974 represented a 6.0% increase in the size of the hard-copy collection. The 22,216 volume increase in fiscal year 1985 represented only a 4.0% increase. (The addition of 22,000 volumes, which was made possible by additional state funding earmarked for equipment and library materials, was the largest hard-copy volume increase since fiscal year 1979.) An ideal increase in the collection size as a percentage of the existing collection would be 5%.[21]

The number of titles of monographs published in the United States and Great Britain (the two largest English language publishers) continues to increase as does the number of serials and journals published. A consistent acquisition rate thus represents a smaller and smaller percentage of the increases in the body of knowledge as represented by the number of items published. In 1930 only 10,000 book titles were published in the United States. By 1961 the number had increased to 20,000; by 1973 it was almost 40,000 titles, and in

1981 (the last year for which data are available) the number of titles of monographs published in the United States was almost 50,000. It thus took approximately 30 years for the number published to increase from 10,000 to 20,000. Yet it took less than 10 years for the number to increase from 40,000 to 50,000 titles--both are increases of 10,000 titles. While the increase has not been as dramatic for monographs published in Great Britain, there has been an increase of almost 8,000 titles published in that country between 1973 and 1981.[22]

The increase in number of periodical and serial publications has been even more dramatic. According to Ulrich's International Periodicals Directory and Ulrich's Irregular Serials and Annuals, there were 26,500 periodicals and serials listed in the 1967 directories. By 1972 the number had increased to 70,000 listings, and in 1974 there were 80,000 separate listings. In 1985 there were more than 103,000 listings.[23] The 5,246 periodicals and journals to which the University of Idaho library subscribes today represents only 7.6% of the available periodical titles. The 6,954 other serial titles to which the library subscribes are equal to approximately 20% of these publications. Due to the university's subscription to such a small percentage of the published journals, the 1984 Accrediting Team recommended the university increase its journal subscriptions.[24]

In this study a conclusion was reached that the library would experience no significant change in the average annual hard copy acquisition rate over the next 20 years. This assumption is based largely upon expected technological changes in the delivery of materials. A 20,000 volume annual acquisition rate will represent an ever smaller percentage of the number of items published. Therefore, greater reliance will be placed upon interlibrary loan, optical disks and online text. Hard-copy volumes will not disappear in the foreseeable future.

An average annual acquisition rate of 20,000 hard-copy volumes would increase the size of the subject libraries by 400,000 volumes over the next 20 years. Total hard-copy collection size would reach 975,000 volumes. Using the accepted open stack storage rate of 15 volumes per net assignable square foot (NASF), 65,000 NASF would be needed to house the collection in ths manner. Only 27,941 NASF is available now for the open stacks and reference areas. An additional 37,059 NASF would therefore be required.

Various options for dealing with the hard-volume collection are outlined in detail in Chapter 7. One option is to house all hard copy volumes in open stacks to allow maximum use, the opportunity to browse by the patrons, and the most direct manner to teach students how to use the library. This is not, however, a practical alternative for the University of Idaho. Estimating construction and furnishing cost at $11.11 per volume, or $166.67 per NASF ($125/GSF), the costs are too great to provide open access for all materials. Other options were studied.

Numerous studies have been made to show that not all volumes are used with the same frequency. Richard W. Trueswell undertook a

number of studies during the mid-1960's which examined use rates in college and university libraries. Trueswell found that in science libraries 20% of the items are used 80% of the time. In social sciences and humanities libraries where material does not get out of date as fast, 50% of the items are used 80% of the time.[25] Studies of science material at the University of Pittsburgh again documented use characteristics for scientific journals, although the use patterns varied among the disciplines.[26]

The University of Idaho library study has concluded that it is practical and appropriate to put little used items in storage if the items can be retrieved in a reasonable time frame. Basement space for up to 275,000 volumes is available, and the basement will be developed as a semi-remote storage facility.

Automation provides one of the keys to using a storage area successfully. An online catalog is imperative to enable a person to determine if a specific volume is in storage. The online catalog is a great asset to any researcher making it possible to request an item from storage by electronic mail. If the turn-around time for retrieval is quick, the item could be waiting at the loan desk when the patron arrives at the library. Less time would be expended than if the patron had to search the library stacks for the appropriate volume.

U.S. Government Documents

The University of Idaho library is the regional depository in the state for U.S. government documents. It receives and retains one copy of all government publications printed and distributed by the Government Printing Office. The documents range from pamphlets to large volumes, from popular articles to technical treatises. Many of the publications are transcripts of regional records and constitute primary research source material. Others report the results of extensive research in both the social and physical sciences. Still others contain statistics which can be used to measure social and economic change. The library also secures a large number of non-depository publications of U.S. government agencies located in Idaho and the northwest.

The library became Idaho's regional depository in the late 1950's. As a regional depository it must 1) accept all publications made available from the Government Printing Office to regional depositories, 2) keep this material permanently, and 3) serve its region.

The documents collection is one of the library's greatest research assets. Becoming a selective depository in 1909, it has been an energetic collector of material. Today the document collection is the best in the northwest and one of the five or six best in the country.

The strength of the documents collection is apparent from its size. Today there are over 400,000 paper copy volumes of documents. Another 150,000 volumes are on microfiche. These

numbers do not represent a physical count of volumes. [For example, each year of the Federal Register has one numerical volume. It may, however, require 50 physical volumes to hold the issues of one numerical volume. For purposes of counting the U.S. government document volumes in the library, a year's Federal Register is one volume.] The collection is shelved on the second floor of the library in a closed stack area with relatively narrow aisles arranged according to the classification number system designed by the Superintendent of Documents. Since the summer of 1979, between five and ten percent of the documents received by the library have been listed in the Western Library Network (WLN) microfiche catalog. Since the listing of these documents, interlibrary loan requests have increased.

Table 13 and 14 below summarize the yearly title and numerical volume acquisition rates for U.S. government documents.

TABLE 13

ACQUISITION RATES BY TITLE(1)
DEPOSITORY DOCUMENTS

Federal Fiscal Year	Paper Copy Titles	Microfiche Titles
1978	32,142	4,045
1979	69,878*	16,553
1980	34,234	24,438
1981	37,385	27,993
1982	15,849**	27,974
1983	10,836***	23,748***
1984	23,000	35,000
1985	24,247	30,794

*Unusually high figure due to elimination during the year of a large backlog.

**Low figure due to elimination of sending out in paper 9,044 Congressional bills.

***Figures are for the partial year: October 1, 1982, to April 30, 1983.

In addition to these numbers, the library secures annually approximately 6,000 titles of non-depository U. S. documents.

Table 14 indicates, based on title count, there has been a decline in the yearly acquisition rate of paper copies. The new titles acquired in Federal FY 1984 were equal to approximately 72% of the titles acquired in FY 1978. By contrast, the number of microfiche titles has grown dramatically--an 865% increase from FY 1978 to FY 1984.

The numerical volume acquisition rate shows a similar decline. In FY 1978 a total of 15,149 paper copy numerical volumes were added. In FY 1986 the acquisition rate had declined to 10,586. Over the thirteen-year period from July 1, 1973, to July 1, 1986, the number of paper copy numerical volumes increased by over 150%.

In contrast to the decline in the rate of acquisition of paper copy numerical volumes, there has been a substantial increase in the number of volumes in microfiche. As of July 1, 1979 (the first date for which statistics are available), there were 7,273 volumes (80,000 items) of microfiche (at the new conversion rate). By July 1, 1986, there were over 115,855 volumes on microfiche. This represents a 1592% increase in seven years.

A 1983 projection developed by the Government Printing Office[27] indicated a regional depository should be prepared to house an additional 2,500 linear feet of microfiche and/or more than 7,500 linear feet for paper copy in the next 20 years. Today it is estimated that paper copies of U. S. documents equal slightly more than 18,600 linear feet. All but approximately 2,000 of these feet are housed in the 6,926 NASF documents area on the second floor. An additional 7,500 linear feet of paper copy would increase the total collection by slightly over 40%. As a percentage of the documents housed on the second floor this is an increase of 45%. Based upon this ratio of new to existing linear feet, there is a need for a 45% increase in space. This increase translates into an additional 3,117 NASF if the documents are shelved similarly to the way they are today. Additional space will be needed to house the non-depository documents which are received annually.

The 155,855 volumes of microfiche documents are housed in 22 cabinets. These cabinets contain more than 1000 linear feet, only 40 percent of the amount by which the microfiche collection is expected to grow in the next 20 years. A total of 3,500 linear feet of microfiche would require approximately 2-1/2 times as many microfiche cabinets as are presently used, or a total of 45 cabinets. Leaving some distance between the cabinets to avoid overloading the floor, a 75 square foot area is indicated. Based upon the ratio of the projected linear square footage increase to the current square footage, an additional 187 square feet will be needed to house additional micro-fiche cabinets. This is a minimal increase in space compared to the projected increase for the paper copies.

In summary, based upon estimates supplied by the Government Printing Office, by the year 2003 the U. S. government documents area will need to be approximately 11,000 square feet in size assuming 1) an equivalent arrangement of shelving is used, and

TABLE 14

NUMERICAL VOLUME
ACQUISITION RATE

	7-1-73	Net Vols Added	7-1-74	Net Vols Added	7-1-75	Net Vols Added	7-1-76	Net Vols Added
U. S. Documents	280,620	7,160	287,780	6,367	294,147	14,142	308,289	14,684
U. S. Documents on microfiche								

	7-1-77	Net Vols Added	7-1-78	Net Vols Added	7-1-79	Net Vols Added	7-1-80	Net Vols Added
U. S. Documents	322,973	15,149	338,122	12,681	350,803	26,851	377,654	13,039
U. S. Documents on microfiche					16,000	11,977	27,977	13,389

	7-1-81	Net Vols Added	7-1-82	Net Vols Added	7-1-83	Net Vols Added	7-1-84	Net Vols Added
U. S. Documents	390,693	8,778	399,471	8,276	407,747	9,943	417,690	10,998
U. S. Documents on microfiche	41,366	17,965	59,331	50,000	109,331	38,933	148,264	113,110

	7-1-85	Net Vols Added	7-1-86
U. S. Documents	428,688	10,586	439,274
U. S. Documents on microfiche	261,374	25,168	115,855*

*Formula for converting microfiche to volumes changed from 5 fiche = 1 volume to 11 fiche = 1 volume in 1986 by A. L. A. Standards Committee, so figures before 7-1-86 (if translated) would be approximately one-half the amount shown.

2) the library continues to be a regional depository. The projected space needed for the stacks and microfiche cases is almost 50 percent more than the existing space devoted to these functions.

In addition to including space for increases in the number of paper copy and microfiche volumes, it will likely be necessary to include space for the storage of laser disks and for the equipment needed to use the disks. Data for the last two censuses are available on magnetic tape. The Library of Congress and the National Aeronautic and Space Administration now publish data on laser disks. A subcommittee of the Joint Committee on Printing of the U.S. Congress is now studying whether governmental data and reports published in these forms should be made available to the regional depositories. If the material is made available, there is a presumption that the regional depositories must provide the equipment to read and use the material. Cabinets must also be provided to house the disks. The preliminary report of the subcommittee indicated that all government data must be provided access regardless of the method of distribution.

Since there is no copyright on U.S. documents, it is extremely possible that independent publishers may produce some documents on disk, as the next stage in the development of the medium.

Map Collection

The university's map collection, the largest map collection within 200 miles of the University and the largest in Idaho, is located on the second floor in a 2070 square foot area. The collection includes atlases, gazetteers, U.S. Geological Survey (U.S.G.S.) topographic maps, U.S. Defense Mapping Agency (D.M.A.) Maps, road maps, thematic maps, geologic maps, forest, history and other miscellaneous maps.

The library is a "depository" library for the maps published by the D.M.A. and the U.S.G.S. The entire world is covered by the military maps issued by the D.M.A. Since 1975 D.M.A. has also been supplying libraries with hydrographic and foreign aeronautical charts. The U.S.G.S. topographic maps comprise the majority of the maps in the collection. As a depository library of these maps, the university library receives all quadrangle maps of the fifty states as they are issued. At the present time the topographic maps of the eastern United States are stored in the basement.

A map distribution agreement was signed by the Government Printing Office, the U.S.G.S. and the D.M.A. in October 1984. The agreement has led to a regular wholesale map distribution program on a regular basis by almost all the governmental agencies which publish maps. In addition to receiving U.S.G.S. topographic maps for all fifty states [the library had recently convinced the U.S.G.S. to stop sending topographic maps from the eastern United States], the library is now receiving, as a result of this agreement, Forest Service maps for major national forests and nautical charts of U.S. waters from the National Oceanic and Atmospheric Administration.

Table 15 below summarizes the size and rate of acquisition of the map collection.

TABLE 15

MAPS

	7-1-73	Added	7-1-74	Added	7-1-75	Added	7-1-76	Added
Maps	50,060	2,799	52,859	3,546	56,405	5,437	61,842	3,312

	7-1-77	Added	7-1-78	Added	7-1-79	Added	7-1-80	Added
Maps	65,154	3,524	68,678	2,938	71,616	2,464	74,080	5,591

	7-1-81	Added*	7-1-82	Added	7-1-83	Added	7-1-84	Added
Maps	79,671	2,332	124,003	2,170	126,173	2,163	128,336	2,898

	7-1-85	Added	7-1-86
Maps	131,234	2,972	134,206

*Includes initial count of 42,000 serial maps.

Excluding the 42,000 serial maps which were added to the count in FY 1982, the university's map collection has increased by nearly 85,000 maps in the period between July 1, 1973, and July 1, 1984. This is an average increase of almost 3,300 maps per year.

Maps and the map cases which hold them are heavy. An analysis by a structural engineer has indicated that the floor load capacity in the library has been exceeded in certain portions of the map collection area and is close to capacity in other areas. While the existing cases could be rearranged in the existing space to reduce the load, approximately 20% of the maps are already housed in the basement storage area. If space were available where the floor load could tolerate additional weight, one or two more 5-drawer map cases would be needed just to house the existing collection. A conservative estimate assumes a continued increase of approximately 2,500 maps a year. Over a 20-year period, the number of maps are expected to increase by 50,000. With a more substantial map budget, this number would increase. At present each 5-drawer unit can house approximately 1,500 maps. At the projected annual increase of 2,500 maps, each year's acquisition would require slightly more than one and one-half 5-drawer map cases. A 20-year rate of acquisition would require 33 new cases. The existing space

will not accommodate that number of cases. A minimum of an additional 60% more space (approximately 1250 NASF) is needed. This figure does not include space for those maps presently housed in the basement.

If 20% of the yearly acquisitions were for topographic maps of the eastern United States, and if a decision were made to continue to store these in a storage area, the number of maps which would be housed in the main collection would be reduced to 2,000. Over a 20-year period, the acquisition of 40,000 maps would require approximately 27 new cases. This would make it necessary to provide only a minimum of 40% increase (approximately 830 NASF) in space.

Special Collections

The department of special collections serves several inter-related functions. Generally, these functions center on the preservation and use of primary source materials--those materials which, by their very nature are unique, rare or special. Among the forms of material are books, pamphlets, ephemera, theses, manuscripts, photographs (ranging from daguerrotypes to modern transparencies), maps and magnetic video and audio recordings. Some of these materials are valued both for their information content and for their existence as artifacts. The several "collections" housed in this department are for the research use of faculty, students, and visiting scholars.

Because of the ofttimes fragile or unique character of the materials in special collections, security is a major concern. The collection is non-circulating, its use is limited to the special collections area, and photocopying is permitted only when it will not harm the material and is permitted by federal copyright legislation. Pens cannot be used in the reading room. Users of the material must register with the attendant and identify the materials requested; the requested material is retrieved by a staff person from the closed stacks.

Access to materials in special collections is generally through the library's public catalog. Some materials, however, such as photographs and manuscripts, can only be located through the use of special catalogs and guides in the department.

The following paragraphs describe some of the collections.

The Day-Northwest Collection of over 12,400 volumes consists of published materials for the study of Idaho and the Pacific Northwest. The items included relate to persons, places, events, and things in and of the geographical area now know as the state of Idaho, together with materials which deal with Idaho's place in the region and the nation.

The Basque Collection was started in 1964 because of the large Basque population in Idaho and because of the scarcity of material on their history and culture in this country. There are about 3,400 volumes in this collection.

The printed, mimeographed, and other near-print publications of the state and its sub-divisions including the University form the Idaho Documents Collection which is closely allied with the Day Northwest Collection.

The first editions of the works of Sir Walter Scott, along with books relating to him, form the Scott Collection. Since 1962 many volumes by or about the British writer have been added to the collection which now numbers over 1,200 volumes. Many volumes in the collection are quite rare and some are personally autographed by the author.

The Picture Collection consists mainly of photographs of the university and its many activities and of the state of Idaho. One of the most valuable segments of this collection consists of the negatives given the library by heirs of the late Nellie Stockbridge of Wallace. These pictures provide an almost complete photographic record of Wallace and the surrounding Coeur d'Alene mining districts from 1894 to 1965.

In 1973 the library began to collect works by and about Ezra Pound, American man of letters who was born in Hailey, Idaho, in 1885. The Pound Collection now contains over 280 titles including first editions and signed copies. The library collects microfilms of Ph.D. dissertations on Pound and has acquired phonograph recordings, and some correspondence and photographs.

The Caxton Collection, a collection of all titles issued by Caxton Printers, Ltd., of Caldwell, Idaho, has been brought together so that interested persons may study the publishing history of Idaho's only nationally-known publisher. Since it began publishing after World War I, Caxton Printers has received many accolades for superlative craftsmanship and has been acclaimed as having "recaptured the past in a long line of Western Americana." A standing order has been placed for one copy of everything published by Caxton, so that this collection may be as complete as possible. It presently numbers about 1,000 volumes.

The Day Collection of Fine Bindings consists of over 1,365 volumes of rare editions, some bound in leather and hand tooled in gold by Italian book craftsmen. Included are 40 volumes of Shakespeare printed on rag paper; the Lenore edition of the complete works of Edgar Allen Poe, printed on Japanese vellum and limited to ten signed and numbered sets of which this is number one; plus multi-volume sets of the works of Hawthorne, Stevenson, Burns, Dumas, and many others.

TABLE 16

SPECIAL COLLECTIONS AND HISTORICAL PRINTS

	7-1-73	Added	7-1-74	Added	7-1-75	Added	7-1-76	Added	7-1-77	Added	7-1-78	Added
Special Collections (Volumes)	16,330	924	17,254	1,319	18,573	1,289	19,862	2,044	21,906	4,001	25,907	3,442
Prints, Photos, Slides (Piece Count)	13,620	385	14,005	767	14,772	1,040	15,812	1,230	17,042	1,296	18,338	1,830
Maps, Historical (Piece Count)												

	7-1-79	Added	7-1-80	Added	7-1-81	Added	7-1-82	Added	7-1-83	Added	7-1-84	Added
Special Collections (Volumes)	29,349	1,078	30,427	801	31,228	954	32,182	984	33,166	744	33,910	950
Prints, Photos, Slides (Piece Count)	20,168	12,927	33,095	10,051	43,146	7,805	50,951	3,535	54,486	2,156	56,642	?
Maps, Historical (Piece Count)										650	650	--

	7-1-85	Added	7-1-86
Special Collections (Volumes)	34,860	1,164	36,024
Prints, Photos, Slides (Piece Count)	?	?	?
Maps, Historical (Piece Count)	650	--	650

Among the primary source materials in the department of special collections are personal and organizational papers and records and university archives. Totalling over 3,000 cubic feet of correspondence, memoranda, diaries, ledgers, financial papers, photographs and other records, these materials cover nearly all facets of life in Idaho and the Pacific Northwest. Among the more significant bodies of records are those of Governors Bottolfsen, Clark, and Ross; U.S. Senators and Representatives French, Pope, Shoup, Heyburn, Welker, and White; State Legislators Lough and Hosack; and University of Idaho regents and faculty C. J. Brosnan, F. C. Church, Rafe Gibbs, F. B. Laney, S. B. Rolland, and Judge J. F. Ailshie. A large group of materials reflect Idaho's major industries: mining and lumbering; these include records of S. A. Easton and G. F. Jewett, Craig Mountain Lumber Company, Hercules Mining Company, Washington, Idaho and Montana Railroad, and Burke's famous mining hotel, the Tiger Hotel Company. Other records include memorabilia of the Public Land Law Review Commission, and the Shoshone County Flood Control Project; and businesses such as the Weisgerber Brewery of Lewiston, and Nelson Auto Electric of Moscow. These are irreplaceable and are to be preserved permanently.

Other collections in special collections include 1) the first or file copies of over 4,100 theses and dissertations submitted for advanced degrees at the university; 2) historical maps of the area now known as Idaho, covering the period up to 1900; 3) yearbooks of Idaho high schools and colleges; 4) Idaho telephone directories and city directories from Idaho, Oregon, and Washington and 5) tapes and transcripts generated by the Latah County Historical Society Oral History Program.

Not all items in special collections are counted in a manner similar to the way in which general collection items are counted. For example, as discussed above, primary source materials may be measured in terms of cubic feet. Table 16 thus includes only those items for which volume or piece counts have been kept over a period of time.

The number of special collections volumes has increased from 16,330 volumes on July 1, 1973, to 36,024 volumes on July 1, 1986. This is an increase of 19,694 volumes over a thirteen-year period or almost 1,515 volumes a year. However, not since fiscal year 1979 has the increase been that large. For the last five years the average yearly increase has only been slightly more than 900 volumes.

The piece count of prints, photos and slides has increased from 13,620 on July 1, 1973, to 56,642 on July 1, 1984, a 416% increase over the twelve-year period. These counts represent only those items that are cataloged. The historical maps were cataloged in fiscal year 1984; no specific records were kept prior to that date.

Space devoted to special collections is located on the ground floor and in the basement. Table 17 summarizes the square footage of these areas.

TABLE 17

SPECIAL COLLECTIONS SPACE

Location	Type	Net Assignable Square Feet
Ground Floor	Staff Work Area & Patron Seating	946
Ground Floor	Stack Area	1,491
Sub-basement	Storage	6,250
	TOTAL	8,687

Since a large portion of the special collections acquisitions is in the form of gifts to the library, it makes it difficult to predict accurately future rates of acquisition and the space that may be needed to house the new material. However, it is also clear that the existing space is inadequate and to some degree inappropriate for the collection, staff and patrons.

A large portion of the collection, particularly archive material, is stored in the basement. However, humidity levels in this area are too high to provide appropriate preservation of the documents; dampness and poor ventilation may cause growth of mold. A dry or polluted atmosphere may lead to embrittlement of documents. Especially archives and primary source material must be housed in areas with appropriate atmospheric conditions. These conditions will be corrected when the basement remodel is completed.

Most of these items and books are irreplaceable. Thus, not only must appropriate atmospheric conditions be provided but precautions should be more stringent than for those other buildings having similar risk. Currently, there is no fire protection system in the building as a whole or in any of the special collections areas. The need for appropriate systems will be studied in more detail during design of new space.

Direct sunlight, with its ultraviolet rays, is harmful to book bindings and paper. Now, the ground floor special collections stack abutts 20 feet of window wall. The windows have been covered, but not all of the ultra-violet light is being kept out.

The retrieval of archival material from the basement is currently difficult. Due to availability of staff, an archival box is generally retrieved by a single person. The box or boxes are heavy; they must be retrieved and loaded onto the elevator. Upon arrival on the ground floor, the individual carrying the box must open two locked doors to get the material to the user in the reading area. These restrictions are not conducive to ease of access or use for either staff or patrons.

The present reading area within special collections is not conducive to scholarly research. While there are sound reasons for having staff supervision of public areas, the presence of staff and users in the same room can be disrupting to both. Some separation should be available to allow staff members to communicate as needed without interrupting the patrons.

The use of shared space by the public and the staff, and the shortage of library space in general, has made it difficult to provide adequate work space for the staff. A sorting area is needed, as is a temporary storage area and space for processing materials.

The collections that together comprise the special collections department are some of the most valuable resources in the library. The material should become a showcase for the university. The potential for use by non-university personnel is tremendous. Adequate and appropriate space is needed for their storage and use.

Microforms

The microform collection of the university library comprises two different subject areas housed in two different locations. The patents and U.S. government documents on microfiche are housed on the second floor as part of those two collections. An examination of these is included in the discussion of the U.S. government documents and map collection. The remaining microforms are housed behind the reserve desk on the ground floor. This discussion deals with the latter collection.

Microform is a general term for the format resulting from one of several techniques for reducing the contents of a printed page.

Special equipment is needed to read microforms. The library's collection of microforms includes microfilm, microfiche, microcard and microprint. Microfilm comes in photographic film format. It is possible for a 1,000-foot reel of 16 mm width film to accommodate up to 3,000 pages of standard size (8½ x 11") paper.[28] Microfiche is a flat rectangular sheet of film rather than a roll, on which a number of microfilmed images are arranged in a convenient sequence. The sheets are nominally 4" x 6". Microfiche is considered to be a "low capacity" microform. The standard of the National Micrographics Association provides for the images to be arranged in 7 rows and 14 columns for a maximum of 98 frames per fiche.[29] Where a negative is printed onto photographic paper rather than film, the product is called a micro-opaque. The microcard, which is a 3" x 3" micro-opaque format, has rapidly disappeared from the market. Table 19 below shows that the University of Idaho library has acquired no new microcards since 1973. A larger (6" x 9") opaque sheet is a microprint; no microprints have been acquired since 1984.

There are a number of reasons for acquiring material in microform. One of the primary reasons is the saving of space. It is estimated that, if the most efficient form of cabinet storage is used, one square foot will house 100 reels of the 35 mm film (or 200 reels of 16 mm) or 2,300 fiche.[30] It is, thus, theoretically possible one square foot could contain 200 reels, and each reel could hold 3,000 pages, a total of 600,000 pages. If each volume contains 500 pages (a high estimate), 6,000,000 pages translates into 1200 volumes. Studies of stack space for a general collection indicates that one square foot can generally house between 15 and 20 paper copy volumes. For 16 mm reels, a given square foot could thus house 60 times as many volumes (1200/20 = 60). For 35 mm reels, each square foot would hold approximately 30 times as many volumes.

Other reasons for acquiring material in microform are 1) to obtain material not available in hard-copy, 2) to preserve deteriorating materials; 3) to make available for use rare books and manuscripts which would otherwise be restricted in use; and 4) to provide a security copy of important materials.

As of July 1, 1984, the library housed over 227,000 volumes in microform, excluding U.S. government document microforms. The breakout by subject is shown on Table 18. One of the largest parts of the collection, which is included within the humanities division total, consists of Early American Imprints and contains over 75,000 volumes on microprint cards. This set enabled the library to obtain the volumes when hard-copy reprints were not available. It includes most American books and pamphlets published between the years 1640 and 1819. The titles cited in Wing's Short Title Catalogue are also available in microform because a micropublisher put together a specially collected group of earlier publications. Hard-copy reprints of this information would not have been available for acquisition.

TABLE 18

MICROFORM VOLUMES BY SUBJECT

Microform Volumes by Subject	7-1-73	7-1-74	7-1-75	7-1-76	7-1-77	7-1-78	7-1-79
Humanities	72,611	73,939	76,405	79,103	86,786	93,517	96,054
Social Sciences	3,681	3,791	3,857	3,984	4,128	4,245	3,675
Science & Technology	2,182	2,334	2,395	2,538	2,658	3,077	3,284
TOTAL	78,474	80,064	82,657	85,625	93,572	100,839	103,013

Microform Volumes by Subject	7-1-80	7-1-81	7-1-82	7-1-83	7-1-84	7-1-85	7-1-86
Humanities	104,999	108,554	114,484	118,315	120,969	125,047	125,672
Social Sciences	29,076	41,092	55,273	60,948	75,424	90,007	97,615
Science & Technology	3,509	3,673	3,855	4,050	4,226	4,349	4,440
TOTAL	137,584	153,319	173,612	183,313	200,619	219,403	227,727

The library's microform holdings also include past issues of national, international and Idaho newspapers. Included are the New York Times from 1851, Washington Post from 1955 and the London Times from 1914.

Second copies of a number of the periodicals are also in microform, mostly microfilm. The library also subscribes to the Educational Resources Information Center (ERIC) microfiche publications beginning with 1977. ERIC is a national information system that collects, screens, organizes, and disseminates reports on education.

Table 19 below shows the increase in the piece count of microforms over the last 12 years. The substantial increase in the count of microfiche results at least partially from the subscription to ERIC which began in 1977. Beginning in fiscal year 1984 U.S. government documents were included in the total; data for this year are thus not comparable with data from previous years.

The university's piece count of microforms is low compared to other institutions in the Pacific Northwest. According to the Library Statistics of Colleges and Universities in the Pacific Northwest, published by the Academic Division of the Pacific Northwest Library Association, April 1985, as reported in the Fall 1985 issue of The Bookmark,[31] the university's rank by collection size, excluding U.S. documents, was 9th in the Pacific Northwest. Its rank in terms of total number of microform units was, however, 16th.

TABLE 19

MICROFORM PIECE COUNT ACQUISITIONS

	7-1-73	Added	7-1-74	Added	7-1-75	Added	7-1-76	Added	7-1-77	Added	7-1-78	Added
Microforms												
Microfilm reels	7,666	446	8,112	836	8,948	749	9,697	481	10,178	531	10,709	763
Microcards	10,883		10,883		10,883		10,883		10,883		10,833	
Microfiche	40,604	2,800	43,404	2,204	45,608	2,038	47,646	1,969	49,615	1,756	51,371	52,871
Microprint	64,838	1,827	66,665	2,911	69,576	2,777	72,353	3,822	76,175	4,913	81,088	3,840
TOTAL	123,991	5,073	129,064	5,951	135,015	5,564	140,579	6,272	146,851	7,200	154,001	57,474

	7-1-79	Added	7-1-80	Added	7-1-81	Added	7-1-82	Added	7-1-83	Added	7-1-84	Added
Microforms												
Microfilm reels	11,472	448	11,920	370	12,290	318	12,608	307	12,915	1,110	14,025	3,308
Microcards	10,833		10,833		10,833		10,833		10,833		10,833	
Microfiche	104,242	26,076	130,318	19,194	149,512	25,120	174,632	28,263	202,895	*	*	26,780
Microprint	84,928	2,864	87,792	4,418	4,418	3,207	95,417	1,578	96,995	148	97,143	
TOTAL	211,475	29,388	240,863	23,982	177,053	28,645	293,490	30,148	323,638	1,258	122,001	30,088

	7-1-85	Added	7-1-86**
Microforms			
Microfilm reels	17,333	1,339	18,672
Microcards	10,833		10,833
Microfiche	*	272,988	1,166,763
Microprint	97,143		97,143
TOTAL	125,309	274,327	1,293,411

*Comparable data not available.
**The fiche formula changed from 5 fiche = 1 volume to 11 fiche = 1 volume in 1986.

There are a number of reasons for this relatively low ranking. Institutions that have substantially changed their roles and missions during the last 15-20 years and have acquired a number of periodical back issues, may only have been able to acquire the material on microform. Other institutions have begun to rely on microform copies for their journal permanent file copies--keeping paper copies for the heaviest use period--usually 5 years. [This is a possible option for the University of Idaho library and is discussed in the options section of this report.]

Even without a substantial increase in the library's microform collection, there are some significant existing space problems. Microform cabinets, where full, are very heavy. The library's floor load, or the weight that the floor is designed to hold, is not great enough to hold a concentrated number of cabinets in a small area. In the stairway leading from the ground floor to the basement, a section of the concrete floor slab is beginning to separate from a section of the concrete wall above it. This section of slab is cantilevered from the main two-way support system which, according to the structural analysis, probably reduces its load bearing capacity below the design load. Microform cabinets are located in this area. The weight load produced by the cabinets almost equals the design load. At one point it exceeds design load. The separation between the wall and the floor probably results from the heavy loads placed in an area with a weaker structural capability. In order to prevent further structural damage to the building, some of the cabinets should be moved. There is, however, no additional space in the microform area.

As additional cabinets are acquired to house the increasing microform collection, including items that have already been obtained, more space must be provided to house the cabinets. Just to house the existing cabinets additional square feet should be provided to better distribute the load. The environment in which microforms are housed must be appropriate. The relative humidity should be maintained at from 40 to 50 percent, and the temperature should be near 70 degrees F.[32] Mold can form on microform if it gets too cold, causing damage to the photographic image. If the film becomes too dry it may become brittle and crack.

Better facilities designed for the use of the microforms will help raise the utilization rate. The number of requests for microform items during the past four fiscal years is shown in Table 20 below.

TABLE 20

NUMBER OF REQUESTS FOR MICROFORMS

FY 1981	FY 1982	FY 1983	FY 1984	FY 1985
3,160	3,971	3,289	2,427	3,920

A two-week reader survey made during the last two weeks of the spring 1985 semester did not indicate a heavy use of the various readers and printers.

Low utilization rates may be a result of the following factors: 1) little promotion of the availability and use of items on microform, 2) the type of research being done at the university does not require access to the types of items on microform, and 3) the quality of the space and equipment available for the patron, i.e., user acceptance.

To encourage microform use quality space must be provided. The area designed for microform use has been encroached upon by computer terminals. Chairs are often unavailable at the readers. Insufficient space is allocated to each unit. Standards indicate that microfilm reader and reader-printer positions each require 40 square feet, and microfiche reading positions each require 30 square feet if machines are placed on tables. If the microfiche readers are placed in 4-foot wide carrels, each will take a minimum of 40 square feet.[33] The readers at the University of Idaho library occupy significantly less space than the above guidelines suggest. The regular 2' x 3' library carrels used for the readers provide no room for note taking. Inability to take notes dissuades research use of the readers.

The two reader-printers are located behind the reserve desk in an area that was not designed for machine use. Again, there is no place to take notes or to put personal belongings.

Conclusion

Regardless of future expansion of the microform collection, more space is needed for the existing cabinets and readers. The placement of additional cabinets in the existing area is likely to cause further structural problems. More and better quality space is needed for the reader machines to improve use and acceptance of microforms for library patrons.

Reader and Library Staff Space 6

Fig. 24. Staff space for technical services in 1957

Fig. 25. Staff space for technical services in 1986

Chapter 6

Reader and Library Staff Space

This chapter examines basic standards for reader space in college libraries together with the implications of these standards as applied to the University of Idaho library. This chapter also deals with requirements for adequate library staff space.

Reader Space

General Standards

Library Seating Capacity

There are a number of standards cited in the library literature with regard to the number of reader stations needed in a college library.

The Association of College and Research Libraries (ACRL) adopted standards in 1975 for libraries serving academic programs at the bachelors and masters degree levels and for those universities that grant fewer than ten doctoral degrees per year.

Formula C of the "Standards for College Libraries" sets the following standards for reader space:

> The seating requirements for the library of a college wherein less than fifty percent of the FTE enrollment resides on campus shall be one for each five FTE students; the seating requirement for the typical residential college library shall be one for each four FTE students; and the seating requirements for the library in the strong, liberal arts, honors-oriented college shall be one for each three FTE students.[34]

Before its adoption by the ACRL, the "25% standard" was used by state coordinating and governing boards and some accrediting agencies. It is still being used by many agencies as a means of measuring the quality of a college or university library.

Many other authors and library consultants have argued that the "25% rule" is too hard and fast and does not allow for difference in the mix of programs and enrollments or the availability of other study spaces on campus. Keyes Metcalf, one of the foremost library authorities, lists in Planning Academic and Research Library Buildings[35] twelve criteria for determining seating capacity.

1. The quality of the student body and faculty. The higher the quality, the greater the library use.

2. The library facilities provided. The more satisfactory the seating accommodations and the services provided, the greater the use.

3. The quality of the collections. Superior collections increase use.

4. The curriculum, in general. Students in the humanities and social sciences use the library more than do those in the pure and applied sciences.

5. The emphasis placed on textbook instruction, which tends to reduce library use.

6. Whether the student body is resident or commuting and, if the former, whether the dormitories provide suitable study facilities. Heaviest library use in most residential institutions is in the evening; in commuting ones, during the daytime hours.

7. Whether the location is rural, suburban, or urban. Large population centers tend to decrease evening use because of other available activities or attractions.

8. Whether the institution is coeducational or for one sex only. Coeducation tends to increase library use, particularly in the evening.

9. The emphasis placed by the faculty on the library and on non-textbook reading.

10. The percentage of graduate students and the fields in which they work.

11. The institution's policy in regard to use by persons other than those connected with it.

12. The departmental library arrangements which may make available other reading facilities and reduce the use of the central library.[36]

The use of any formula has been called into question by Lawrence Lieberfeld, a management consultant with Peat, Marwick, Mitchell and Company of New York. Lieberfeld states:

> ...the very concept of a formula applicable to large numbers or classes of colleges or universities is questionable. Variables that influence the student's decision during the course of the day or evening to study or browse in the library include the nature of the academic program, the nature of the collection and the library's circulation policies, the character of the student residences, the academic calendar, and the location of the library building. Why should this configuration of factors be the same for any two institutions?[37]

For those institutions for which he has served as a consultant, Mr. Lieberfeld asks that a field survey of the actual utilization to tables, carrels, and microreading stations be taken during the period of the year when the maximum load occurs. The average peak use for those universities for which the surveys were taken was only 44% of the available stations and only 5.1% of the FTE enrollment.[38] The median rate of utilization in the studies cited was typically 50-70 percent of peak, even when weekend counts were excluded.[39] Mr. Lieberfeld does concede that when the demand is equal or nearly equal to the supply of such facilities, the survey data may not be valid because students intending to use a reading area might be deterred by the apparent overcrowding.

There is then a variety of standards, opinions and means for assessing the need for reader space. The "magical" number of stations depends on the mix of enrollments by level and program, the availability of other study or research spaces on campus, the residential or commuting nature of the student body and the close availability of other major research library facilities. More high quality seats are likely to be filled than seats of poorer quality.

Square Footage Allowance Per Seat

The ACRL Standards of 1975 state that each seat should have twenty-five square feet of floor space associated with it.[40] These standards were adopted prior to the increased reliance and use of computer terminals, microform readers, and audio/visual (TV carrels). These technological advances led the WICHE planning group to state:

> ...The common use in state space standards of 25 ASF per reader station is seriously inadequate if a high proportion of carrels, microform and audio/visual stations and private studies are to be allowed.[41]

The WICHE manual also states that the smaller the area of a study room, the larger the area per station required due to the higher proportion of internal circulation space required in smaller rooms.

The "Standards for College Libraries, 1985" also recognizes these changing patterns, and the 1975 standard of 25 NASF per station has been increased to 25 to 35 square feet per station, depending upon the function to be undertaken.[42]

The University of Missouri Facilities Program Plan for Libraries[43], published in 1981, suggests the following guidelines:

TABLE 21
ASSIGNABLE SQUARE FEET PER READER STATION
BY TYPE OF STATION

Type of Station	ASF/Station
Student Users	
Open Tables	25
Small Carrels	30
Research Carrels	40
Microform and Audio/Visual	40
Typing	30
Lounge	30
Small Group	25
Faculty Users	
Faculty Studies	50
Research Carrels	40
Open Tables	25
Public Users	25

Library Seating Capacity

When opened in 1957, the University of Idaho library provided seating for 1,090 readers, or 28% of the University's enrollment of 3,775. A twenty year growth factor was incorporated into the library; thus, space planned eventually for stack areas was used initially for seating.

Today approximately 8,500 students are enrolled in the University of Idaho, but there are only 802 seats for patron use in the facility. This number of seats represents space for fewer than 10% of the student body. The existing seating by floor and area is detailed on Table 22.

Seating for 10% of the student body is substantially less that recognized by the seating standards. It could be argued, though, that 802 seats would be minimally sufficient at the present time if additional quality study space were available on campus. Unfortunately, as indicated in the following section there is little designated study space on campus. Moreover, many of the 802 seats in the library are not conducive to good studying and use of library resources.

Other Campus Study Areas

Tables 23, 24, and 25 indicate the available study space on campus. As Table 23 shows there are a number of departmental and college reading and study rooms. The total seating capacity of these areas is 371 seats. These areas are usually designated for students enrolled in a particular college or department. Of the 371 seats identified for study, 60 are in areas reserved for doctoral students. Other areas available for doctoral students to study, included some offices or portions of offices or laboratories.

During the last few years the computer has changed studying methods as well as the material which is studied. Coursework that may have been done in the library or other type of study areas with paper, pencil and a calculator may now be done on a personal computer or a terminal attached to the mainframe computer. There are nine public use computer terminals in the library; Table 24 indicates additional terminals and personal computer sites in academic buildings. A newly remodeled facility in the Administration Building added another 20 computer stations, but at present the demand for computers still exceeds their availability. Some terminals should be located in the library but productive use of them can of course be made in a variety of locations.

TABLE 22

UNIVERSITY OF IDAHO LIBRARY
PATRON SEATING SPACE
July 1985

Room	Seats
Ground Floor	
Reserve Reading Room	142
Area behind Reserve Desk	6
Special Collections	10
Computer and Microform Area	17
Lounge	46
Subtotal	221
First Floor	
Browsing Room	53
Lobby	11
Humanities Library	
Reading Space	113
Index/Reference Area	50
Subtotal	227
Second Floor	
U. S. Documents	21
Maps	7
Social Science Library	
Reading Space	119
Index/Reference Area	40
Subtotal	187
Third Floor	
Science Library	
Conference/Study Room	29
Reading Space	63
Index/Reference Area	45
Periodical Area	30
Subtotal	167
TOTAL	802

TABLE 23

DEPARTMENTAL AND COLLEGE
READING AND STUDY ROOMS

Academic Unit	Building Location	Room #	Square Footage	Seating Capacity
Col. of Art & Architecture	Art & Architecture North	106	979	15
Col. of Business	Administration	347	574	15
Col. of Education Doctoral Student Study Area	Col. of Education	501	1,564	12
Col. of Education Instructional Materials Center	Col. of Education	310	2,862	54
Col. of Engineering	Janssen Engineering	211	1,820	53
Col. of Forestry	Col. of Forestry	0013	657	16
Col. of Forestry Doctoral Student Study Area	Col. of Forestry	018	3,120	48
Health, Physical Education	Physical Education	100	541	17
Honors Program	Psychology	102	281	8
Naval Science	Navy	112	424	13
Physics	Renfrew	101	339	8
Plant, Soil and Entomological Scncs	Agrcltrl Sciences	249	676	10
Psychology	Psychology	106	322	6
Range Resources Dept.	Col. of Forestry	206	283	10
Schl of Communication	Communication	108	510	16
Schl of Home Economics	Home Economics	201	456	21
Schl of Home Economics	Home Economics	109	651	16
School of Music	Music	102-104	1,021	33
TOTAL			17,080	371

TABLE 24

PERSONAL COMPUTERS AND COMPUTER CLUSTER SITES
LOCATED IN ACADEMIC BUILDINGS EXCLUDING THE LIBRARY

Building	Room Number	Square Footage	Seating Capacity
Administration Building	010	735	10
	020	572	8
	221	948	20
Agricultural Sciences	304	581	7
Buchanan Engineering Lab	113	351	7
	outside 347	38	5
Col. of Forestry	11B	369	11
Gauss Engineering Lab	144	728	10
TOTAL		4,322	78

TABLE 25

DORMITORY AND STUDENT UNION STUDY AREAS

Building	Room Number	Type of Area	Square Footage	Seating Capacity
Alumni Center	04A	Computer Lab	171	2
		Subtotal	171	2
Theophilus Tower	330	Typing Room	126	4
Theophilus Tower	530	Typing Room	126	4
Theophilus Tower	531	Study Room	168	4
Theophilus Tower	731	Study Room	168	6
Theophilus Tower	730	Typing Room	126	4
Theophilus Tower	930	Typing Room	126	4
Theophilus Tower	931	Study Room	168	6
		Subtotal	1,008	32
Wallace Res Cnt	C20B	Computer Lab	320	12
Wallace Res Cnt	C20C	Study Room	130	4
Wallace Res Cnt	C20D	Study; Printer	130	1
		Subtotal	580	17
Gault Hall	237	Computer Lab	153	3
		Subtotal	153	3
Upham Hall	B-1	Study Room	508	14
Upham Hall	106	Computer Lab	114	2
		Subtotal	622	16
Steele House	B-6	Study Room	75	2
		Subtotal	75	2
Student Union		Study Area	1,384	56
		Prsnl Computer & Typing Room	473	14
		Computer Lab	535	20
		Subtotal	2,392	90
		TOTAL	5,001	162

Table 25 shows the designated reader study areas in dormitories and the student union . Although students can use their rooms to study, there are only 72 additional designated study seats in common areas of the dormitories. During the fall semester 1984 over 1600 students were living in the dormitories. A walk around campus shows students studying in all types of locations, e.g., T.V. lounges in the dormitories, and the food service seating area in the Student Union Building. Frequently, the 53 seat Appaloosa lounge area of the Student Union Building is used by students as an impromptu study area. It is not unusual to find students using unlocked conference rooms in the Student Union Building as a quiet place to read or study.

The changing character of the university's student body must be considered in determining adequate study space. Ten years ago 47% of the student body lived in dormitories, fraternities, sororities or family housing. Today less than 40% of the students live in such "on-campus" housing. Many off-campus students commute from outlying communities, and since it is difficult for these students to return home between classes they need a place on campus for study. Thus, trends toward a student body consisting of greater of off-campus students increases the demand for additional study space.

Quality of Library Seating Space

Table 22 shows a total of 802 seats in the Library. Not all of these seats, however, are conducive to research and studying. One hundred and thirty-five of these seats are located in index/reference areas. Although in recent years students have used these for reading and study, these seats were designed for patrons using the indexes and other reference material. Another 29 seats are in conference/study rooms that are not always available to individual students; 11 seats are in the lobby (including the seats available at the microfiche catalogs) and 6 seats are behind the reserve desk for patrons using the newspaper files. The 10 seats in special collections are designed for those patrons using the special collections material; they are only available from 8 a.m. to 5 p.m., Monday thru Friday. Excluding these special purpose seats, there is general seating in the library for 636 persons, which is only 7.5% of the student body. The appendix II provides a complete breakout of seating by type, net assignable square foot per occupant where the seating arrangement allows for such a calculation, and a description of the location.

The type and location of the seating is as important as the number of seats. Chairs placed too near each other are usually poorly utilized, as a number of studies have shown.[44] Of the 636 general seats in the University of Idaho library 146 are at 5-or-6 person tables. Studies have shown that tables designed for six are rarely occupied by more than four people; there is not enough "psychological" room.[44] If this is the case, then the general seating capacity is further reduced in the University of Idaho library to 594.

The computer microform room in the library also fails to provide sufficient seating space, thus discouraging the use of the

technology. As shown in the Appendix there are a number of areas where the square footage per seat is less than the "minimum" 25 NASF/ seat.

The shortage of space, attempts to accommodate as many students as possible within the given space, and constraints on equipment purchases have limited the type of furniture and study areas in the library. The 2' x 3' wooden and metal carrels that constitute the bulk of library seating are sufficiently large to allow a student to read or study one book or journal at a time, but they are not large enough for those researchers using two or three different sources. There are no enclosed carrels available for either graduate students or faculty.

The location of the study furniture and the need to make efficient use of the space has adversely affected the level of quiet in parts of the library. For example, the ground floor reserve book area, there is both a copy machine and a computer printer within earshot of 159 patrons. On the second floor the copy machine is located in a reading area. The area designed for the use of the government documents occupies the same room as the social science office area.

Conclusion

It is clear from the preceding discussion that:

a) There are an insufficient number of study areas on campus;

b) There are an insufficient number of study/research spaces in the library;

c) There are too many library seats in too small an area;

d) Additional types of seating should be provided.

University of Idaho enrollment is expected to increase at an annual rate of 1.5% over the next twenty years. Thus, it is anticipated that in 2005 there will be more than 10,000 full-time equivalent students enrolled at the university. Accommodating this number of students will require a minimum of seating for 1000 patrons.

Staff Space

Significant space problems also exist for the library staff. The original library staff in 1957 has grown from 25 employees to more than fifty; moreover additional staff and faculty are currently employed on a temporary basis to complete the retrospective conversion to machine readable form of the card catalog and to perform other related activities. However, the amount of space available for office and work areas is substantially the same as it was 30 years ago.

As indicated previously, technological changes affect the operation of the library and the equipment needed to carryout its functions. For instance, there is an increasing need for computers and the appropriate connections.

The technical services area has insufficient space for the personal computers essential to the library's participation in the Western Library Network. There are insufficient electrical outlets for the computer cabling resulting in a safety hazard when the cable is laid along the floor. Computers have not replaced the need for typewriters, standard desks, nor the items that need to be cataloged. Thus, although main-frame computers and personal computers together with membership in the Western Library Network have increased the efficiency and productivity of technical services' library personnel, the amount of space necessary for individuals to work in these areas remains the same.

Personal computers attached to the Western Library Network were added in each of the subject libraries during 1986. A former typing room on the second floor is being used as an office to conduct computerized database searches. The environment is not ideal since there is no separate ventilating system; however no other space is available to place the terminals. The use of online systems to answer reference questions and to conduct bibliographic searches and obtain numerical data will further increase the need for terminals and the space to house them.

The demands upon the library faculty to engage in research, to publish, and to conduct personnel matters are not met by the present available space. With the exception of the dean and the associate dean of the library, no faculty member has an office with sufficient privacy to conduct sensitive personnel discussions or avoid disruptions. In fact, only two other members have offices and these offices are not completely enclosed.

Space for the staff and space for the patrons often coincide, thus increasing the level of noise and distraction for both groups. For example, the social science office space is also used by patrons for documents reference. Providing assistance to patrons disturbs both other employees and other patrons.

It is easier to document the crowded conditions of the staff than it is to project the amount of space that should be available for their use. Special characteristics of a library affect the amount of staff space required. Recent studies at the University of Idaho show that present staff needs a minimum of 3,800 square feet of additional space to function properly and efficiently. Even with this increase, however, there would be for each staff member approximately 100 square feet less space than was available to the staff in 1957. Projected increases in staff over the twenty-year planning period indicate there will be a need for another 2500 square feet of staff space in the future; thus, library expansion should provide at least 6300 square feet of additional space to meet present and future staff needs.

Options 7

Fig. 26. Computer terminals and microform stations require a well-designed environment and access to cables and electrical systems; improvements are needed in the existing area.

Chapter 7

Options for Meeting the Library's Space Needs

Chapters 5 and 6 of this report describe in detail the existing space constraints for collections, readers and staff of the library. This chapter will examine specific options that were studied to alleviate space constraints. The options discussed below are ones whose implementation, in and of themselves, do not necessarily require additional space. These options were individually and collectively evaluated prior to an analysis of new space. This effort ensures that optimal use of existing resources will be made before new space is added. In the case of the library, the study committee and administration drew certain conclusions from the options analysis that reduce significantly the amount of additional space required.

Presented below is a discussion of those options, the advantages and disadvantages of each, and the conclusions reached after evaluation was made.

More Effective Utilization of Existing Space

Areas examined in an analysis of this option include a) the ground floor book storage area; and b) use of the former typing rooms located on each floor. Almost 70,000 volumes are housed in the 3,597 net assignable square feet which compose the ground floor book storage area. As basement space is upgraded for book storage, it will become feasible to relocate these materials. A space analysis indicates this area could be converted to a non-storage area. While specific use of this area will depend upon further program and design analysis, there appears to be merit in considering it for a public use area. As shown on the floor plans found in Chapter 3, there is good ingress and egress to and from the area. The area is heated and cooled; however, some remodeling would be needed to make it useable public space. Included would be the removal of asbestos, the reinsulation of piping, installation of a dropped ceiling, floor coverings, upgrading of lighting and purchase of equipment and furniture for the functions to be housed.

When the building was constructed, typing rooms were built on each of the three main floors. These rooms have not been used for typing rooms for a number of years. For some time they were used as general study rooms, with 15 chairs in each. For study, these rooms were never used by that many individuals; each person would have been allotted only slightly more than 13 square feet. Gradually these rooms have been converted to space for special programs and staff work areas. Only the room on the third floor is presently available for use by students. The room on the second floor is used for online database searches and the room on the first floor was recently

turned into a retrospective cataloging workroom since no space was available for this operation in the technical services area.

Once new or remodeled space is found to house these two functions, these rooms should be remodeled for other functions. There are no faculty or enclosed graduate carrels available in the library at the present time, even though the university is now placing greater emphasis on graduate education and research. When the rooms were general study areas, they were not used effectively; however, if each of the rooms were remodeled to provide graduate/faculty enclosed carrels, it is likely they would be more useful. Allowing for 50 square feet per person, each former typing room could be converted into 4 carrels, or a total of 12 could be provided. While this proposal would improve the utilization of the current space, the addition of only 12 carrels would be insufficient to meet the total demand for that type of seating in a research library.

Conclusion: Reclaim 3,597 square feet of ground floor book storage space for other library functions by transferring materials to newly remodeled space in the library basement; remodel former typing rooms for study areas that are in demand by patrons, e.g., faculty and graduate study.

Automation

What are the space implications of automation? Increased use of automation leads to both increases and decreases in the amount of space various library functions require. The terminals needed to access an online public catalog will increase space needs, freeing much of the present space devoted to the card catalog. There always will be a vestige of the traditional catalog, due to the unique nature of some items. Should a decision be made to purchase a turnkey system with a minicomputer to run the integrated library system, additional space would be needed to house the minicomputer. The automated functions within the technical processing area have already increased the space demands of that area as automated systems and some functions that still must be done manually compete for the available space. Additional Western Library Network terminals were installed in the public service areas during fiscal year 1986. Again this demanded increased space. In the future it will be imperative to provide appropriate electrical chases, adequate power, reduce safety concerns associated with makeshift arrangements that have been used, and generally to provide for a well-functioning building for automated tasks.

For the next twenty years the use of commercial databases and optical disks may reduce only marginally the space requirements, especially that for housing the book collection. Even if online and optical disk bibliographic database searching were to eliminate the

need to purchase and house all hard-copy indices and abstracts, the space savings would not be significant. The reference areas in the three subject libraries total 4,800 square feet. This number includes space for seating as well. In addition, there are a number of items placed in the reference sections which are unlikely to find their way into an online or optical database.

The greater the reliance on information on an online system or optical disk, the greater the need for equipment. This is especially true if the search systems for the major online database are sufficiently improved so that the patron rather than the librarian can conduct the search. If students could purchase online searching time much as computer time is presently purchased, it is, however, likely that the searches would not need to be done in the library building. Nonetheless, at the present time and for the foreseeable future the use of optical disks will be limited to the area in which they are housed. If there is no compatibility between the equipment needed to use the disk of one vendor and that of another vendor, it is conceivable that the equipment needed to use a large number of optical disks could take more room than the hard volumes which they replaced.

Automation is expensive. Substantial expenditures have been and are being made for retrospective conversion, and the hardware and software needed for an integrated library system demand capital investments. It is estimated that a turnkey system for the University of Idaho library including terminals would cost at least $250,000. This amount, while significant, is substantially less than a system would have cost ten years ago. At that time an investment of $1 million would not have been unrealistic. There are also costs involved in setting up access to off-campus sites or other institutions. The university is fortunate, however, in that some of the necessary systems are already in place because of the electronic delivery system. The expenditure of funds is likely to lead to a more effective library because it will be able to provide new and useful services to supplement existing services. While it is questionable whether automation will reduce any staff needs, there is no question that with an automated library, the staff can be more productive and effective as many routine chores will no longer need to be done manually. As the library grows, responding to the evolution of the university's role and mission, new services are essential as access to a wider volume of information becomes more crucial.

Mr. De Gennaro, head librarian at the University of Pennsylvania, made the following comment concerning the costs of an automated system:

> ...the automated networks, to the extent they are successful, will actually cost more to operate than today's traditional autonomous libraries. But that cost will be considerably less than that which a single library would have to bear in order to sustain the usual exponential growth patterns of traditional research libraries.[46]

Conclusion: Remodel space to accommodate extensive use of computer and electronic communications technologies.

Development of Unfinished Basement Space

The building analysis found in Chapter 3 detailed the physical and functional problems of using this space for the storage of library materials. Approximately 40,000 volumes from the humanities and social sciences libraries are presently housed in the basement in addition to a significant number of special collections archival material and U.S. government documents. These items are being stored because no other space within the confines of the library building is available, not because the space is suited to the storage of library materials.

Perhaps the greatest single problem preventing the effective use of the space for the storage of library materials has been the seepage of water into the basement and the high levels of humidity which therefore result. Inappropriate levels of humidity can damage library materials, destroying the substantial investment in funds that has been made over a period of years. Many of the materials including special collections archival materials are irreplaceable and are a valuable resource to researchers and others studying the history of Idaho and the Pacific Northwest. The university engaged the services of a consulting firm to determine the cause of the water infiltration and to design corrective measures. Construction of a sub-surface drainage system is underway in the summer of 1986.

Other limitations (foundation pads, asbestos, piping, lighting) are detailed in Chapter 3. Currently, the booklift that transports materials between floors does not extend to the basement. Individuals retrieving material from that area must use the stairs or the hydraulic elevator which is slow and frequently in use.

There are a number of advantages to using the basement as a storage area.

1) The space can be upgraded/remodeled to the level appropriate for the storage of library materials at a cost significantly lower than the cost of new construction--even construction of a remote storage area.

2) Having a storage area within the confines of the existing building reduces the amount of time needed to retrieve a requested item, thereby alleviating patron dissatisfaction with having items placed in storage. (Many institutions with remote storage areas can only guarantee 24-hour to 48-hour retrieval; to date the library has been able to retrieve items within one-half hour of the request.)

3) Using the basement, as compared to a remote storage area, will reduce operating costs in at least three ways:

a) the individual responsible for the retrieval of the materials can be assigned other functions that must be performed within the library building, thereby promoting efficiency,

b) the amount of time and equipment, such as a van, needed for retrieval and thus the cost of retrieval per volume, will be less, and

c) necessary operating costs for providing the appropriate environmental conditions will be lower on a gross square footage basis for this space than they would be for new space;

4) Although making the space a public access area is not feasible, a staff member would be able to escort a patron who wished to browse to the basement. After specific volumes were located, they could be delivered to a reading area on the upper floors. If patrons were allowed in a remote storage area, either a full-time staff person would have to be assigned to the space--increasing operating costs--or appointments would have to be made to browse the stacks.

The upgrade of the basement space has been funded for $1.6 million, and design is expected to commence fall 1986.

Conclusion: Remodel basement space for storage of up to 275,000 volumes of less frequently used library materials, selected U.S. government documents, and archive materials.

Use of Compact Movable Shelving

The section on trends in libraries discussed the fact that a number of institutions are using compact movable shelving for the storage of library materials in new space, for controlled areas, open access areas and storage areas. Such shelving systems have also been used in a number of spaces which have been remodeled--in libraries, high-rise office buildings and other academic buildings--all areas where space and its cost can be at a premium. Compact shelving allows for an increase in the number of shelving units within a given square footage area (increased bookstack capacity) by eliminating the aisles. Under the arrangement, an aisle is created by moving the stacks when entrance into a bookstack range is needed. Each range glides smoothly on steel rails.

Although there have been some uses of compact shelving arrangements in undergraduate, open-access space, most library uses have been in controlled access and closed stack areas. Although a number of studies have demonstrated that the systems are safe and that the retrieval and use of the materials are not slowed by having to wait to access the stacks, the university has concluded that at this time

such systems, in a heavily used academic library, are best suited to remote or closed areas, but not suitable for general use (open access) areas.

Two functional areas should be examined for the installation of compact shelving--special collections and U.S. government documents. In addition, the possibility of their use in storage areas should be fully explored.

A substantial portion of the special collections archival material is housed in standard size boxes. These boxes can easily be stored in compact shelving. At the present time the special collections books, documents, archival materials and files occupy 7,741 square feet. Of that amount 1,491 square feet are located on the ground floor and 6,250 square feet are in the basement. The stack and storage areas are closed to the general public. It would be advantageous to the patrons if the use of compact shelving would allow all these items to be stored in one location.

The U.S. government documents collection, which is closed to public access, is one of the fastest growing collections in the library. While in the last few years a greater and greater percentage of the documents have been produced in microform rather than in paper form, the number of paper forms is also increasing at a substantial rate. The U.S. documents librarian has estimated, based upon frequency of use, up to 80% of the collection could be placed in compact arrangements without reducing significantly the speed or ease of access. The remaining 20% of the collection is used too extensively, it is believed, to be housed in compact shelving. It is noteworthy that U.S. documents come in a variety of sizes. This means a) shelf units must be wider, b) some reorganization might be necessary to place wider documents in a separate location, or c) compact shelving arrangements might not be used as extensively as hoped.

Since the U.S. government document stacks are closed, and there is presently no additional available space into which to expand the collection, many bays contain more ranges than would be found in open access areas. While compact shelving arrangements can increase the storage capacity of a given area 50% to slightly more than 100%, a 65% projected increase is being used for the U.S. government documents for purposes of discussion. Thus, if 80% of the documents could be placed in compact shelving, and if the capacity of this area were increased by 65%, the same number of documents could be housed in approximately 4,700 square feet, or 68% of the existing space devoted to the documents. This "space savings" (2,183 NASF) would provide sufficient room for approximately 117,000 volumes in standard shelving, or 194,000 volumes in compact shelving. This would allow for an increase in the size of the document collection for 8-12 years, depending upon decisions to return possibly 2,000 linear feet of documents from the basement to the main part of the collection. In addition, space would be available for additional microfiche cases to house the increasing number of documents being published in that form.

All of these assumptions will, of course, be subject to further programming analysis once a design team has been retained.

The use of compact shelving in any storage areas should be given serious consideration. Without a complete architectural, engineering and compact shelving study, exact determinations of the number of volumes of monographs, bound journals, and archival material that could be housed in the basement of the library are not possible. It is clear that the presence of piping, the available ceiling height, and other architectural restrictions will affect use of compact shelving in the space. In many areas a greater efficiency of storage and a lower capital storage cost per volume may be achieved by the use of conventional shelving with 22" to 24" aisles.

If the basement is used only for the storage of library materials, it is estimated that up to 275,000 volumes of bound journals and monographs could be housed there. In addition, there would be space to house the estimated increased quantity of archival materials to be acquired in the future.

In summary, there are both advantages and disadvantages to the use of compact shelving. Advantages include:

1) The existing building can be modified (in effect) to increase its net assignable square footage. If a given number of volumes can be housed in a smaller area, the space which once housed these volumes is then available to house additional volumes.

2) The compact systems can be purchased and installed over a period of time, as the need develops and as funds are available. This is in contrast to the alternates: major remodeling, an addition, or new building space where construction funds must be available over a one to three year period. A phased installation of compact shelving would also allow staff members to get accustomed to the operation of the system.

3) Federal studies have shown that fire protection is improved by using compact storage systems. Compactness reduces the source of oxygen and retards the spread of flames in case of a fire.

4) It is possible that some the existing shelves may be used in the compact system frames. This could reduce the cost of the system by as much as 25% per bay.

5) Each square foot of space that is not needed because of the installation of compact storage shelving saves a minimum of $3.00 per gross square foot of operations, maintenance and utility costs.

The disadvantages to using compact shelving are as follows:

1) The live load limits of all the floors in the existing library (with the exception of the basement) would be exceeded by the weight associated with a compact shelving system. The structural engineer consulted believes that if the system were installed and used to its capacity, it would be necessary to strengthen all floors through the installation of rails and supports. This would increase the cost of the system on a gross square footage basis. If the system were installed and not all the shelves were used, the floor load would be reduced but the cost and space effectiveness of the shelving system would be reduced.

2) The shelving systems are expensive. Compared to regular shelving, the cost is 400 percent higher. However, on a gross square footage basis when the cost of new construction plus conventional shelving is compared with the cost of compact shelving, compact shelving is less expensive.

3) Apprehensions by staff and patrons exist regarding safety and ease of use.

4) While it is possible to move a system once it is installed cost and convenience suggest leaving the system intact once it has been placed.

Conclusion: Incorporate compact movable shelving in the basement storage area to the extent feasible; plan to house a majority of special collections and U.S. government documents collections on compact shelving.

Increased Use of Microforms

An earlier section of the report noted the recent discovery that microforms are beginning to disintegrate after 30 to 40 years. There are a certain number of items in the library's collection (e.g., ERIC documents, some U.S. government documents, some reprint editions) that are available only in microform. There is no question that permanent copies of bulky and difficult to bind items, such as newspapers, should be in microform.

Potential space savings could be achieved if some bound journals could be replaced by microform copies. Many institutions have adopted a system of ordering two copies of a specific journal, a hard-copy volume and a microform volume. The hard copy is kept for a period of 2 to 5 years, which is usually its peak use period; however, the peak use period can vary depending upon the subject matter of the journal. After the designated peak period, the hard-copy volume is discarded, and the microform copy becomes the library's permanent copy. The University of Idaho library has both paper copy and microform copies of some periodicals which are used

frequently. The paper copies, however, are kept until they are no longer useable.

University Microfilms Incorporated, the largest commercial microform vendor, presents some arguments for the use of microform:

1) Even taking space needs for microform equipment into account, there are significant space savings which can result from the use of microforms. On the average, 15 bound volumes can be housed within a given square foot; at least 150 microform volumes can be housed in the same amount of space. There could be a savings on the magnitude of 10:1, excluding space for equipment.

2) The bibliographic integrity of a collection can be preserved by the use of microforms; there will be less need to buy replacement copies. In the event replacement copies are needed, it is easier to find microform replacements than hard-copy volumes. It is presumed that patrons are more likely to mutilate paper copies than they are microform copies.

3) Two copies of the journal (one paper, one microform) are available during periods of peak use without any additional cost to the library. In making the statement regarding the costs, it is assumed the cost of binding a given journal is the same as the cost of a microform subscription.

The university library today relies on microforms for some subscriptions. However, relying upon the microform copy as the only copy of a journal represents a major policy shift. Some of the reasons for not relying solely upon this format are listed below:

1) Not all journals which the library receives are available in microform from any vendor. A cost analysis proposal presented by Univeristy Microfilms (UM) to the university library indicated UM could provide one-quarter to one-third of the titles to which the library subscribes. Based upon the number of subscriptions and the square footage allowance for bound paper copies versus the square footage for the micro films, over a twenty-year period the use of microforms for this small percentage of the journal titles would save less than 2,500 square feet of space.

2) A larger number of journal subscriptions is demanded by graduate and research emphasis. If the number of subscriptions increases the number available in microform may represent a smaller and smaller percentage of the total collection. Confusion may develop for the library patron in determining whether a specific journal is in print or in microform and consequently what its location is.

3) Color photographs and some tables and graphs lose a significant amount of their clarity when they are microformed. Thus, even though some journals in the biological sciences may be available in microform, it is unlikely that it would be desirable to purchase microform copies to replace the paper-copy issues.

4) Increasing substantially the number and type of microform items would probably necessitate an increase in the staff to service them. If students were allowed to use the microform cabinets, the chances that a microfilm roll or microfiche card would be misfiled would increase. Depending upon the number of rolls and cards, it is possible that it could be lost forever. With cataloged items on an open access shelf, shelving of materials or shelf reading usually spots any misplaced volume.

5) University Microfilms' proposals make operational sense by comparing the cost of the microform copy with the cost of binding the paper copy. In the case of the University of Idaho, however, the commercial binding costs are lower than UM estimated due to a failure to consider the volume of business cost adjustments by the UI commercial bindery. If the number of journals being commercially bound were reduced, the cost per volume would increase. Conceivably, the entire cost for binding could be higher than it is now and the microform copies would still have to be purchased.

Conclusion: Increase the use of microforms where cost effectiveness, control and use patterns demonstrate their value; remodel microform area to foster ease of access and use.

Library Reorganization

The University of Idaho library is organized into divisional libraries. Humanities materials are on first floor, social sciences materials are on second floor, and science materials are on third floor. A larger percentage of science materials are in storage than materials from other libraries, and there is substantially less study space on third floor than on the other two floors.

Library staff have considered a centralized reference system with all subject specialists having offices in one area rather than being dispersed on other floors. Indexes, abstracts and other reference items would all be located in one area. Open access stacks would start on first floor and be continued in other floors in alphabetical order. Current journals would be kept together in a current reading room rather than being divided between subject libraries and the browsing room.

Such an arrangement appears to be more efficient and constitute a better utilization of space since the number of volumes and the number of reader seats could be more evenly distributed among floors. This distribution would help to reduce noise caused by having a large number of seats congregated in a small area; it would thereby improve the study environment.

A more efficient reference arrangement could be obtained. The humanities reference area contains a large number of 3- and 4- shelf units. These are almost nonexistent in the science library since space for these low units is no longer available. One 6-shelf unit can hold as many volumes as two 3-shelf units. Removal of chairs and placement of many standard units in the reference area would reduce the total space needed for the reference area. Access to reference material would be enhanced; and there would be no question of location for a specific index, abstract, or other reference item. The average university student has probably not used a library organized by the divisional approach. Making that student feel comfortable in the library may help start his/her college career on the right track and lead toward a continued use of the library.

Such an arrangement could improve the productivity of librarians; fewer reference staff members would need to be on duty at a time to answer general questions. Subject specialists would still be available to deal with any specific questions beyond the scope of other librarians' expertise.

Three disadvantages to the reorganizational proposal have been noted. A shift toward a centralized reference system, while appealing to the undergraduate student, seems to signal to some faculty and graduate students that the library is no longer interested in serving their needs. Graduate students and faculty are more likely to use many of the indices and abstracts, and it could be necessary to travel to other floors than the reference floor to obtain an article cited. If the article is not what was wanted, it may mean a trip back to the index, and the process is repeated. There also appears to be concern that relationships between faculty members and subject area specialists familiar with faculty research interests may disappear.

Conclusion: Retain a single central library for the campus; reorganize internal functions to achieve consolidation of similar functions and the most effective use of staff resources.

Decentralizing Portions of the Collections

The overall shortage of library space might be reduced by decentralizing a portion of the collection. Decentralization in this sense does not mean the construction of a science library or a humanities/social sciences library. It rather means that portions of the existing collection could be interspersed with the collections held in the "reading rooms" of various departments and colleges.

The largest collections of library materials outside of the library are held by the School of Music, Instructional Materials Center in the College of Education, Department of Mathematics, the College of Art and Architecture, and the College of Business and Economics and the Business Development and Research Center. There are also many areas housing reprint collections, and departmental reading rooms. University library materials, however, are found only in Music and Math reading rooms. Is it possible to move some of the bound volumes presently housed in the library into the above areas, thereby reducing the overall space needs in the library building? The 1984 Accreditation Report suggested that the music scores presently located in the library be moved to the reading room of the School of Music.[47] The music scores occupy 59 shelves and slightly more than 120 square feet. This suggestion was not implemented in preference for leaving music scores available to all campus patrons, not just to music personnel who do, perhaps, make the greatest use of them. The library has a collection of children's literature that could be housed with similar books located in the Instructional Media Center, again placing it in an area convenient to those who most frequently use the items.

Materials housed at the Department of Mathematics are indeed library materials, purchased by the library and housed in the math department's reading room. These theoretical mathematical volumes are used only by mathematics faculty and graduate students. There are no other items which meet the narrow definition of material that is housed in this area nor is there space for additional volumes in the reading room.

A number of disadvantages to the decentralization of the collection were expressed by library faculty and members of the university's Library Affairs Committee. The security in departmental areas is not as great as that provided in the library building; it would thus be much easier for portions of the collection to disappear. The library would be doing a disservice to patrons not affiliated with these specific departments who may want access to an item. The patron, especially one from off-campus, would easily assume that all materials are located at the library, not at another location on campus. Reading rooms are not open as many hours a week as the library, further limiting access to the material. Staff for these reading rooms are generally not librarians and cannot offer extensive reference service to patrons. Finally, and most importantly, there was concern expressed that moving the music scores (the item which prompted the most disucssion) would set an unwise precedent for the future. A strong recommendation was made: items acquired with funds from the library budget should be housed in the library, accessible to the whole campus, and under the control of librarians.

Conclusion: House and control all collection materials in the central library (except for selected mathematics materials currently housed in the departmental reading room).

Relinquish Regional Depository Status for U.S. Government Documents Collection

As noted in the descriptive section of this report, the University of Idaho library is a U.S. government designated regional depository.

As a U.S. government documents regional depository, the University of Idaho is required to keep forever items (maps, paper documents, microfiche documents) which it receives from the U.S. Government Printing Office. Substantial growth is expected in the next 20 years in the number of documents and maps the library will be required to keep. One option that affects needed space is the potential relinquishing of regional depository status. The library could become a selective depository. As with any of the other options examined, there are associated cost and benefits, and advantages and disadvantages to consider.

The advantages of relinquishing the regional depository status are summarized below.

1) If sufficient staff time were available, little used items could be withdrawn from the collection. The social sciences librarian has estimated approximately 20% of the documents could be withdrawn. Assuming 20% of the documents take approximately 20% of the space, the square footage needed for the documents area could be reduced by 20% or 1,385 NASF plus approximately 20% of the linear feet of documents housed in the basement.

Change of status would reduce space needed for future acquisitions. Calculations on future space needs indicate if current space configurations are kept, an additional 3,100 NASF would be needed to house the 7,500 linear feet increase in paper copy projected to occur by 2003. If only 80% of the projected documents were kept, and if they comprised 80% of the linear feet, the linear feet needed would be reduced to 6,000. This translates into approximately 2,480 new net assignable square feet. However, 1,385 NASF of the existing space would have been freed up by the removal of the 20% of the documents not used or needed. The projected space need less the projected available space shows a need for only 1,095 NASF of new space, resulting in a total need of 8,021 NASF for the documents collection. This contrasts with the 10,026 NASF estimate if the library remains a regional depository and if the present configuration of stacks remains. The difference in the space needs is slightly more than 2,000 NASF.

The effect on square footage requirements is negligible; but it is likely the projected increase of 2,500 linear feet of microfiche could be reduced; thereby reducing the number of microfiche cabinets and the space needed to house them.

The above calculations are not meant to project detailed future space needs nor detailed space savings should the regional depository status be relinquished; the library also receives approximately 6,000 non-depository documents a year. It is assumed that these will continue to be obtained regardless of whether the library

relinquishes its regional depository status or not. The calculations do, however, document the magnitude of projected differences in space requirements between a regional depository and a selective depository which would house approximately 80% of the items housed in a regional depository.

Although it is more difficult to estimate the space implications, a selective depository could also be selective in the maps it receives and keeps. Thus, it would no longer be necessary for the library to receive and retain topographic maps of the eastern United States and domestic nautical charts. These amount to approximately 20% of the library's map collection or over 25,000 maps.

2) Once the initial weeding were done, a selective rather than regional depository status for the library might reduce the staff workload. The documents section acts as its own technical services unit. It does its own cataloging; the fewer the number of items which need to be cataloged, the less staff time devoted to this function. Since a substantial number of interlibrary loans involve documents, time and effort needed to search, copy and mail requested photocopies might also be reduced.

Disadvantages of relinquising the regional depository status are as follows:

1) The biggest disadvantage is a political one both for the state and the institution. If the university were to relinquish its regional status, Idaho would join Alaska and Montana as the only states without at least one regional depository. There are costs associated with regional status which are funded neither by the U.S. government nor, at this time, specifically by the state. The benefits are accruing to all of Idaho, but the costs are being borne by the university.

It is prestigious to be the regional depository library for Idaho and to have one of the five or six best documents collections in the United States. Other libraries in the state and region rely upon the university's collection of documents. Giving up the status and the availability of documents that might not be available in a selective depository would be disruptive and unfair to the other higher education institutions and public libraries. Many of the institutions have weeded their collections knowing that if they need a specific document, it can be obtained from the University of Idaho.

In addition to use by institutions and individuals in Idaho, the documents and maps are used by students and faculty from Washington State University. The availability of such a substantial collection at the University of Idaho can be considered one of the major components in the resource-sharing arrangement between the two universities.

2) If an insufficient number of documents is published, the regional depositories always obtain their copies of the depository

documents. If there is a shortage of non-depository documents, the regional depositories get first choice.

3) If the library is having difficulty obtaining non-depository documents from an agency, it can use its regional depository status as leverage to obtain the documents.

The analysis indicates capital construction and operating costs (including staff time) would be reduced if the library were no longer a regional depository. On the other hand, there are substantial political and opportunity costs that would be incurred should the status be relinquished.

The university's Library Affairs Committee supports the maintenance of regional depository status for the library. In addition, the committee feels adequate funds should be provided to support the collection. The Library Associates also have gone on record as strongly supporting regional status.

Conclusion: Retain the regional depository status for the U.S. government documents collection.

Relocation of Non-library Functions

The total of non-library functions housed in the library building is 8,090 NASF, 6,334 NASF of which are in the basement. Non-library functions consist of the campus post office offices occupied by the Postharvest Institute for Perishables Information Center, and miscellaneous storage by departments in the basement.

Reclaiming basement space for library use is the key to other options discussed in this section. Without the use of this space a number of options and combinations of options are not possible. Reclaiming basement space for library storage necessitates locating adequate storage space elsewhere on campus for non-library items.

Discussions with the science librarian and Postharvest Institute for Perishables Information Center (PIPIC) librarian indicate there are no advantages in having PIPIC move from the two small offices it occupies. Only disadvantages would result due to the amount of interaction and frequency of communication between these entities.

The campus post office has been located in the library building since its construction in 1951. Its location near the center of campus provides good vehicular and walking access. It is a convenient distance from residence halls and the academic core.

To use post office space might require a rearrangement of library functions. At present there is no alternate location available for the post office, but two future locations have been explored. The greatest disadvantage to moving the post office will be the reluctance of users who naturally resist changes in their routine. Most patrons realize the crowded conditions of the library; and many

do not understand why the post office has not already moved to free additional space for library functions.

Conclusion: Relocate all non-library functios, except the Post Harvest Institute for Perishables Information Center (PIPIC), elsewhere on campus.

Decentralized Reader Space

Other sections note the shortage of study space, not only in the library but elsewhere on campus. How might further decentralization of study areas help alleviate space problems in the library?

The space needs committee recommends study space for at least 10% of the student body be provided within the library. This percentage is well below the ideal "25% standard" recommended by national library organizations and represents too few spaces to reduce by scattering elsewhere on campus. There will always be individuals who study their own material in the library. Regardless of what the computer age may bring, there will always be items which can only be used in the library. Some specific technological advances, such as further use of optical disks, may in fact increase the number of library users in some fields.

The number of study spaces proposed for the library is based on the premise that additional study space exists and will be continually supplemented elsewhere on campus to help meet the overall demand. Such space will be located in a number of facilities. Computer cluster sites, graduate study areas, and departmental reading rooms all provide study areas for students.

Conclusion: Accommodate 1000 reader stations within the library building and distribute spaces that meet the remainder of the demand for study space in other academic and support facilities.

Construction of New Space

There are four construction options available to the university: 1) add space to the third floor; 2) build an addition to the existing building; 3) build a new facility to house all library facilities; and 4) build a remote storage facility to house a portion of the collection. Following is a discussion of each of these options.

Third Floor

A shortage of funds during construction in 1957 resulted in the third floor being reduced in size by 7,865 gross square feet. Completion of the floor in the future would thus add a significant amount of space at a lower probable cost than new construction, as the structure was designed to support the additional loads. The main disadvantage of this approach will be making sure the new space is efficiently utilized. The south side of the building, where

expansion could occur, is presently divided into small offices and seminar rooms.

Addition

An addition to the existing building has many advantages. The building was designed to be expanded; the modular, open plan construction is conducive to an addition. New and old space can be reconfigured without a substantial capital investment. There appears to be adequate space on the existing site for an addition. The major disadvantage of an addition is that construction would use the available land and render the possibility of any further expansion in the long-term future remote. A question to ask is: Would it be preferable to build an entirely new facility now with appropriate site space for expansion for the long term?

New Construction

A new library building would be extremely expensive. Replacement of the space within the existing library could cost $10-15 million excluding furnishings. Added to that would be the cost of additional space needed for growth. While there is concern that the existing library site has little expansion space beyond a proposed addition, there is no centrally located site presently available large enough to accommodate a new library. Costs, however, make this option unrealistic.

Remote Storage

New construction could also mean the construction of a remote storage facility to house the materials. However, as noted earlier, the problems confronting the library are not problems of simply having enough space to store the collections. An analysis of the space needs of all other functions (with the exception of the storage of bound volumes) has indicated the existing building would barely have enough room to house all these functions. Less than 10,000 NASF would remain for housing library materials if other functions were adequately housed. Fewer than 150,000 volumes could be housed on open shelves in 10,000 square feet of space; this arrangement would be totally unacceptable for the University of Idaho. The concept of open access to the majority of the collection, a principle upon which reputable institutions of higher learning in the United States pride themselves, would be lost.

Logically a remote storage facility needs to be compared, not to new space whose functions are different but, to the plan to upgrade the space in the basement. Both options entail operational costs associated with storage. These include: selecting materials to be stored (defining the criteria), changing records to indicate items in storage, moving materials to storage (frequency with which items are moved), retrieval of materials from storage (frequency).

Whether an item is stored in the basement or at a remote storage facility, the first two costs (selecting, records) will be present. However, it would be more expensive to move materials to a remote storage facility than simply to move them to the building's basement. In addition, the frequency and speed of retrieval at a remote spot could not match that of retrieving items stored in the same building. Most remote storage facilities at other campuses cannot guarantee a turn-around time of less than 24 hours; items from the basement can be retrieved in 10 to 15 minutes during most of the day.

It is estimated that it will be more cost effective on a volume basis to upgrade the space in the basement as it would be to build a new storage facility. A storage facility would have to be minimally heated and cooled to provide an environment to properly preserve library materials. The space in the basement is already heated by virtue of heated space above; humidity control and minimal cooling will provide the necessary environmental climate.

Conclusion: Add approximately 8,000 square feet to the third floor of the existing building. Construct a 51,100 square foot addition to the existing building.

Footnotes

Footnotes

[1]Northwest Association of Schools and Colleges, Commission on Colleges, Evaluation Committee Report University of Idaho Moscow, Idaho October 17-19, 1984, p. 7.

[2]Corlann Bush, ed., University of Idaho Long Range Plan (Moscow: University of Idaho, 1984), p. 2.

[3]University of Idaho Library, University Library Long-Range Plan (Moscow: University of Idaho, 1984), pp. 1-2.

[4]Ibid, pp. 3-4.

[5]"The Washington Library Network," The Bookmark, 32 (December, 1979), p. 31.

[6]Warren Owens, "Facing the Future," The Bookmark, 32 (December, 1979), p. 29.

[7]David Andersen, "The WLN PC: Local Processing in a Network Context, "Information Technology and Libraries, 3 (March, 1984), p. 55.

[8]Noreen Alldredge, "Preliminary Proposal to Fred Meyer Charitable Trust: Demonstration of Improved Rapid Information Delivery via Computer Transmission of Digitized Text and Images," (unpublished report), p. 3.

[9]Reference is made to the following two articles reprinted in Hal B. Schell, Reader on the Library Building, (Englewood: Microcard Editions Books, 1975): Alvin Toffler, "Libraries," pp. 30-49 from Bricks and Mortarboard, Educational Facilities Laboratories, 1964 and Robert H. Roglf, "Building-Planning Implications of Automation," pp. 261-266 from Library Automation: A State of the Art Review, (papers presented at the Pre-Conference Institute of Library Automation, 1969. In addition, the following position paper should be reviewed, Educational Facilities Laboratories, "The Impact of Technology on the Library Building," The Bookmark, 21 (December 1968), pp. 83-88.

[10]Jeanie M. Welch, A Survey of Online Bibliographic Searching in the Reference Department of a Medium-Sized University Library, U. S. Educational Resources Information Center, ERIC Document ED 243 483, April, 1984, p. 1.

[11]DIALOG Information Services, Inc., DIALOG Database Catalog, (Palo Alto: DIALOG Information Services, Inc. 1984), pp. 50-57.

[12]Richard De Gennaro, "Libraries & Networks in Transition: Problems and Prospects for the 1980's," Library Journal, 106 (May 15, 1981), pp. 1204-5.

[13]Ibid., p. 1204.

[14]Ibid., p. 1205.

[15]Northwest Association of Schools and Colleges, Commission on Colleges, Evaluation Committee Report University of Idaho Moscow, Idaho October 17-19, 1984, p. 24.

[16]Formula C of the Standards for college libraries, 1985 includes the following standard for space for books: "The space allocated for books shall be adequate to accommodate a convenient and orderly distribution of the collection according the classification system(s) in sue, and should include space for growth. Gross space requirements may be estimated according to the following formula:

	Square Feet/Volume
For the first 150,000 volumes	0.10
For the next 150,000 volumes	0.09
For the next 300,000 volumes	0.08
For holdings above 600,000 volumes	0.07

College Library Standards Committee, Jacquelyn M. Morris, Chair. "Standards for college libraries, 1985." College & Research Library News, 46 (May, 1985), p. 249.

[17]Lawrence Lieberfeld, "The Curious Case of the Library Building," College & Research Libraries, 44 (July, 1983), p. 280.

[18]Keyes D. Metcalf, Planning Academic and Research Library Buildings (New York: McGraw-Hill Book Company, 1965), p. 153.

[19]Northwest Association of Schools and Colleges, Commission on Colleges, Evaluation Committee Report University of Idaho Moscow, Idaho, October 17-19, 1984, p. 8.

[20]Sandy Whiteley, compiler, ACRL University Library Statistics, 1983-84, A Compilation of Statistics from Eighty-six Non ARL University Libraries (Chicago: Association of College and Research Libraries, 1985), p. 23.

[21]Thomas R. Mason and others, Facilities Programs Plan for the Libraries of the University of Missouri-Columbia, U.S., Educational Resources Information Center, ERIC Document ED 219 077, December, 1981, p. 14.

[22]The data are from The Bowker Annual of Library and Book Trade Information, (New York: R. R. Bowker, 1960, 1963, 1974, 1979, 1985).

[23]The data are from Ulrich's International Periodicals Directory, (New York: R. R. Bowker Company, 1965, 1967, 1971, 1973, 1976-1984) and Irregular Serials & Annuals: An International Directory, (New York: R. R. Bowker Company, 1967, 1972, 1974-1985.

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[30]Ibid., p. 48.

[31]Library Statistics of Colleges and Universities in the Pacific Northwest, 1982-83, as reported in The Bookmark, Fall 1984, edited by Richard J. Beck and Gail Z. Eckwright, Moscow: University of Idaho Library, pp. 13-16.

[32]Boss. op. cit. p. 52.

[33]Ibid., p. 48.

[34]Association of Research Libraries and Association of College and Research Libraries Joint Committee, "Standards for University Libraries," College & Research Libraries News, 40 (April, 1979), 101-111.

[35]Keyes D. Metcalf, Planning Academic and Research Library Buildings (New York: McGraw-Hill, 1965), p. 391.

[36]Ibid., pp. 389-390.

[37]Lawrence Lieberfeld, "The Curious Case of the Library Building," College & Research Libraries 44 (July, 1983), p. 278.

[38]Ibid., p. 9.

[39]Ibid., p. 9.

[40]Board of Directors of the Association of College and Research Libraries, loc. cit.

[41]Harold L. Dahnke and others, Higher Education Facilities Planning and Management Manuals Four, Academic Support Facilities (Boulder: Planning and Management Systems Division, Western Interstate Commission for Higher Education, Technical Report 17-4, 1971), p. 6.

[42]College Library Standards Committee, Jacquelyn M. Morris, Chair. "Standards for college libraries, 1985," College & Research Libraries News, 46 (May, 1985), p. 249.

[43]Thomas R. Mason and others, Facilities Program Plan for the Libraries of the University of Missouri-Columbia U.S. Educational Resources Information Center, ERIC Document ED 219 077, December, 1981, p. 93.

[44]Aaron Cohen and Elaine Cohen, Designing and Space Planning for Libraries - A Behavioral Guide (New York: R. R. Bowker Co., 1979), p. 21.

[45]Ibid., p. 3.

[46]Richard De Gennaro, "Libraries & Networks in Transition: Problems and Prospects for the 1980's," Library Journal, 106 (May 15, 1981), p. 1047.

[47]Northwest Association of Schools and Colleges, Commission on Colleges, Evaluation Committee Report University of Idaho Moscow, Idaho October 17-19, 1984, p. 24.

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Appendix

APPENDIX I
UNIVERSITY OF IDAHO LIBRARY
LONG-RANGE PLAN
July 1984

Goal II: Respond to the Professional, Continuing Education Needs of Idaho Citizens

Objectives	Activities
1.0 Develop plans for providing library services to off-campus users.	1.1 As service needs warrant, establish satellite libraries; purchase library materials to be housed in another library; make contractual arrangements with another library for service, which could include paying staffing costs; establish a mail-order collection within the Library; or any appropriate combination of these.
	1.2 As needed, add a staff member to be responsible for administering and coordinating off-campus services.
2.0 Complete the conversion of card catalog records into machine-readable form and establish an online catalog with remote access capability, from both on campus and off.	2.1 Decide the method to be employed for completing the conversion of the card catalog to machine readable form, either by vendor or done internally.
	2.2 Upon completion of the conversion, then establish an online catalog.
	2.3 Arrange for the necessary budgetary support to permit remote electronic access to the online catalog both from campus locations and from locations throughout the state.

Goal IV: Educate Students to be Responsible, Thinking Citizens, Well-Prepared to be Leaders in Their Communities and Professions

Objectives	Activities
1.0 Strengthen the Library's collections in support of the core curriculum.	1.1 Actively involve the core curriculum faculty in in selecting the titles to be added.
	1.2 Assure adequate support for the Library's materials budget.
2.0 Enhance the Library's program for instruction in use of the Library to encourage maximum exploitation by the students of its resources and to help instill in them a life-long habit of self-education.	2.1 Enhance the Library's student instruction program and aggressively solicit the cooperation of the teaching faculty in this program.
3.0 Find and establish better ways of encouraging recreational reading use of the Library by the students.	3.1 Establish a Library staff committee to formulate a program of encouraging this use of the Library.

Goal V: Produce Graduates Who Possess the Technical and Professional Knowledge Needed by a Changing Society

Objectives	Activities
1.0 Provide a materials budget of a size sufficient to assure that the Library's collections will keep abreast of the new knowledge appearing in journals and books.	1.1 Find and employ effective ways of presenting the Library's materials budgets needs, including the library funding formula.
	1.2 Enlist the cooperation of the teaching faculty in indentifying these needs and assigning priorities to them.
2.0 Foster in the students an awareness of the information to be found in locations outside the Library and the knowledge of how to access it by electronic or conventional methods.	2.1 Utilize the Library instruction program to give special training to graduate students pertinent to their discipline.

Goal VI: Promote Interdisciplinary and Interinstitutional cooperation

Objectives	Activities
1.0 Continue and enhance cooperative activities with the Washington State University Library, and with other libraries in Idaho.	1.1 Be in regular communication with the WSU Library to find appropriate ways in which to to expand our cooperative activities.
	1.2 Continue the daily shuttle service for the exchange of materials.
	1.3 Pursue whatever opportunities arise to expand the cooperative activities with other Idaho libraries.
2.0 Continue participation in the Washington Library Network.	2.1 Assure continuing adequate budgetary support for maximum effective use of WLN.
3.0 Consider joining other computer-based regional and and national networks as appropriate.	3.1 Be continuously alert to, and pursue, opportunities to join with other libraries in these large-scale cooperative ventures.

Goal VII: Expand and Upgrade the University's Research Efforts

Objectives	Activities
1.0 Provide a materials budget of a size sufficient to assure that the materials needed in the collections to support research are adequate to the need.	1.1 Of pertinent activities listed under Goals IV and V.
2.0 Enhance the Library's capacity for computer searching on demand of electronic sources of bibliographic, statistical, abstract/index, etc. information, and increase the Library's budget so that these services may be provided free of charge to the users.	2.1 Staff the data-bank searching activity to permit aggressive "marketing" of the service.
	2.2 Arrange for a budget increase sufficient to allow for the charges for data-bank searching to be absorbed by the Library rather than passed on to the user.

3.0 Continue and enhance traditional interlibrary loan services.	3.1 Cf. pertinent activities listed under Goal VI.
4.0 Provide access via the university's computer network to the Library's online catalog from on-campus and off-campus sites.	4.1 Cf. activities 1-3 under Goal II.
5.0 Establish a campus-wide delivery service to transport library materials to and from faculty offices.	5.1 Arrange for the necessary budget increase to support a daily campus delivery service, in terms of both staff and vehicle expenses.
6.0 Increase the Library's hours of service as appropriate.	6.1 Work with the Library Affiars Committee to determine the need for increasing hours of service.
	6.2 Arrange for the necessary budget increase to support expanding the hours.
7.0 Assure the availabiltiy of appropriate technical and subject expertise from the Library staff.	7.1 Encourage the library staff members to attend workshops, short courses, etc. to enhance their skills.
	7.2 Arrange for the budget support necessary for travel costs, registration fees, etc.
8.0 Provide adequate reference service during all hours the Library is open.	8.1 Seek the budget increase necessary to enlarge the reference staff to the size appropriate for the need with the goal of reaching adequacy in 5 years.

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Goal VIII: Strengthen Graduate Education

Objectives	Activities
1.0-6.0	1.1-6.1 Cf. pertinent activities under Goal VII.
7.0 As part of the necessary expansion of the Library's building, provide an adequate number of appropriately equipped carrels for graduate students.	7.1 During the formal facility planning process, assure that the provision of graduate carrels is properly taken care of.

Goal IX: Attract, Develop and Retain Quality Faculty

Objectives	Activities
1.0 Provide quality library services to the faculty to support properly their instructional and research activities.	1.1 Assure that the Library staff are appropriately skilled, including a formal staff development program.
	1.2 Provide prompt, efficient access when appropriate to scholarly resources or information elsewhere by either electronic or conventional means.
2.0 Assure that Library policies and regulations do not unnecessarily interfere with optimum use of the Library.	2.1 As a continuing practice, monitor the Library's policies and regulations to effect changes where appropriate.
3.0 Assure that quality of the Library Faculty is maintained at the highest possible level.	3.1 Continue to appoint to vacancies the candidates presenting the best possible qualifications.
	3.2 Continue to work to improve the Library Faculty salaries to make them more competitive.
	3.3 Cf. activities 7.1 and 7.2 listed under Goal VII.

Goal X: Expand the University's Involvement in International Programs and Projects

Objectives	Activities
1.0 Be alert to ways of providing Library support to international programs and projects as appropriate.	1.1 By appropriate means and whenever necessary, remind the people concerned of the Library's interest in, and willingness to, cooperate in international programs.

Goal XI: Refocus and Reorganize the Public Service Functions of the Institution

Objectives	Activities
1.0 Continue to provide access to the Library's collections and services to Idaho citizens, either through personal visit or by mail, interlibrary loan, or electronic delivery.	1.1 Maintain the Library's policy of access to its collections and services by Idaho and continue to provide direction to other information resources on campus, be alert to opportunities to enhance that access.
2.0 Cooperate in the effort to establish a computer-based union catalog of holdings in Idaho libraries to facilitate access to them by Idaho citizens.	2.1 Participate fully in the planning activities through the State Library for extablishing a union catalog.
3.0 Support course offerings, conferences, workshops, etc. for the public with Library services where appropriate.	3.1 The activities are defined in the objective.

Goal XXI: Develop plans for the Expansion, Upgrading and Improved Maintenance and Management of Facilities and Grounds

Objectives	Activities
1.0 Achieve a critically-needed expansion of the Library building as soon as possible.	1.1 Arrange for the completion of the formal facility study of the Library building as soon as possible.
	1.2 Press for top priority to be given to providing additional space.
2.0 Add equipment and facilities as needed to utilize new technologies.	2.1 Continue the Library Automation Committee as the primary source for recommendations for adding equipment and facilities.
	2.2 Consider adding a full-time systems librarian when appropriate.
	2.3 Arrange for the budget support adequate to keep abreast of technology.
3.0 Facilitate use of the Library by physically handicapped users, including acquiring state-of-the-art equipment for the use of the visually impaired and the deaf.	3.1 Continue to work closely with the Disability Services Committee and the Coordinator of Disability Services to identify needs and supply them.

Goal XIII: Develop Supplementary Sources of Funding and Alternative Methods of Finance

Objective	Activities
1.0 Re-vitalize the Library Associates, the Friends of the Library group.	1.1 Establish a long-range plan in the Department of Special Collections and Archives with strategies for increasing the size of Library Associates and engaging their active interest in supporting the Library.
2.0 Work with and through the University Foundation to increase donations to the Library.	2.1 The necessary activity is defined in objective.

Goal XIV: Improve Management Policies and Procedures to Accommodate the Growth of University Activities

Objectives	Activities
1.0 Assure the appropriate and timely application of technology to Library procedures to free the staff to the greatest extent possible from repetitive, labor-intensive activities.	1.1 Cf. pertinent activities listed under Goals II, Xii.
2.0 Facilitate staff attendance at workshops, short courses, etc. to improve thier skills and to increase productivity.	2.1 Cf. pertinent activities listed under Goal VII.
3.0 Continue to involve the staff as appropriate in policy and decision making.	3.1 The necessary activity is defined by the objective

APPENDIX II

UNIVERSITY OF IDAHO LIBRARY SEATING
(square footage analysis - selected areas)

Floor	Room Name and Number	Types and Number of Seats	Total Seats	Net Assignable Square Feet (NASF)	NASF/ Seat
Ground	Lounge - 5	Chairs - 22 Large Tables (4@6ea) - 24	46	1461	31.8
Ground	Computer & Microform Area - 12	Microform Readers - 3 Computer Terminals - 9 Reference - 2 Table - 1 Lounge Chair - 2	17	520	30.6
Ground	Reserve Reading Room - 18	Large Tables (2@2) - 4 Large Tables (4@3) - 12 Large Tables (8@4) - 32 Large Tables (9@5) - 45 Large Tables (5@6) - 30 Individual Desk - 2 Wooden Carrels 5@4 -20 Chairs - 2 TV Carrels - 5	142	3676	25.9
Ground	Area Behind Reserve Desk - 23	Large Table (1@6)	6		
Ground	Special Collections - 24	Large Tables (2@4) - 8 Individual Desk - 2	10		

APPENDIX II

UNIVERSITY OF IDAHO LIBRARY SEATING
(square footage analysis - selected areas)

Floor	Room Name and Number	Types and Number of Seats	Total Seats	Net Assignable Square Feet (NASF)	NASF/ Seat
First	Lobby - 102		11		
		Lounge Chairs - 8			
		Microfiche Readers - 3			
First	Browsing Room - 104		53	1515	28.6
		Lounge Chair - 33			
		Individual Desk - 8			
		Large Tables (2@6) - 12			
First	Humanities Library/ Reading-Study Space - 125		113	2721	24.1
		Metal Carrels - 9			
		Wooden Carrels 9@4 - 36			
		Individual Desks - 52			
		Large Tables (4@4) - 16			
First	Humanities Library/ Index-Reference Area - 125		50	790	15.8
		Reference Table Seats - 50			
		Chairs - 2			
		TV Carrels - 5			

APPENDIX II

UNIVERSITY OF IDAHO LIBRARY SEATING
(square footage analysis - selected areas)

Floor	Room Name and Number	Types and Number of Seats	Total Seats	Net Assignable Square Feet (NASF)	NASF/ Seat
Second	Social Science Library; Reading-Study Space - 202	Individual Desk - 37 Metal Carrels - 20 Wooden Carrels 10@4 - 40 Large Table (1@6) - 6	103	2492	24.2
Second	Social Science Library; Periodical Area - 202	Lounge Chairs - 8 Tables (2@4) - 8	16		
Second	Social Science Library; Index-Reference Area - 202	Reference Table Seats - 40	40	894	22.4
Second	U.S. Documents and Maps - 204	Large Table (2@3) - 6 Large Table (1@4) - 4 Large Table (1@5) - 5 Large Table (1@6) - 6 Reference Table Seats - 3 Microform Readers - 4	28		

APPENDIX II

UNIVERSITY OF IDAHO LIBRARY SEATING
(square footage analysis - selected areas)

Floor	Room Name and Number	Types and Number of Seats	Total Seats	Net Assignable Square Feet (NASF)	NASF/ Seat
Third	Science Library/ Reading- Study Spaces - 302	Individual Desks - 35 Metal Carrels - 16 Wooden Carrels (3@4) - 12	63	1496	23.7
Third	Science Library/ Periodicals Area - 302	Large Tables (3@4) - 12 Large Tables (3@6) - 18	30	627	20.9
Third	Science Library/ Index-Reference Area - 302	Reference Table Seats - 45	45	1568	34.8
Third	Study Room - 311	Conference Table - 6	6	156	26.0
Third	Study Room - 312	Conference Table - 6	6	156	26.0
Third	Conference/Study Room - 317	Seats Around Counter - 17	17	198	11.6
		TOTAL	802		

APPENDIX III

MEMBERS OF WESTERN LIBRARY NETWORK
January 1985

LIBRARY

Alaska Court Libraries, Anchorage
Alaska Department of Fish and Game, Habitat Division Library, Anchorage
Alaska State Library, Juneau
Anchorage Municipal Library, Anchorage
Anchorage School District, Anchorage
Battelle Pacific Northwest Laboratories, Richland
Bellevue Community College, Bellevue
Bellingham Public Library, Bellingham
Big Bend Community College, Moses Lake
BOISE PUBLIC LIBRARY, BOISE
BOISE STATE UNIVERSITY, BOISE
Bozeman Public Library, Bozeman
Butte-Silver Bow Public Library, Butte
CALDWELL PUBLIC LIBRARY, CALDWELL
California State Library, Sacramento
Carroll College, Helena
Central Washington Hospital, Wenatchee
Centralia College, Centralia
Childeren's Orthopedic Hospital, Seattle
College of Great Falls, Great Falls
COLLEGE OF IDAHO, CALDWELL
COLLEGE OF SOUTHERN IDAHO, TWIN FALLS
Columbia Basin Community College, Pasco
Columbus Hospital, Great Falls
Dawson College, Glendive
Deaconess Hosiptal, Spokane
Eastern Montana College, Billings
Eastern State Hospital, Medical Lake
Eastern Washington University, Cheney
Echo Glen Children's Center, Snoqualmie
Edmonds Community College, Lynnwood
Ellensburg Public Library, Ellensburg
ENERGY INCORPORATED, IDAHO FALLS
Everett Community College, Everett
Everett General Hospital, Everett
Everett Public Library, Ellensburg
Evergreen State College, Olympia
Fairbanks North Star Borough Library, Fairbanks
Fircrest School-Library, Seattle
Fircrest School, Resident Library, Seattle
Flathead County Library, Kalispell
Flathead Senior High School, Kalispell
Flathead Valley Community College, Kalispell
Fort Richardson Post Library, Fort Richardson
Fort Vancouver Regional Library, Vancouver

LIBRARY

Fort Wainwright Post Library, Fort Wainwright
Fred Hutchinson Cancer Research Center, Seattle
Glasgow City-County Library, Glasgow
Gonzaga University, Spokane
Gonzaga University-Law Library, Spokane
Great Falls Public Library, Great Falls
Group Health Cooperative-Eastside, Redmond
Group Health Cooperative, Seattle
Harrison Memorial Hospital, Bremerton
IDAHO FALLS PUBLIC LIBRARY, IDAHO FALLS
IDAHO STATE LIBRARY, BOISE
Intercollegiate Center for Nursing Education, Spokane
Juneau Memorial Library, Juneau
Kalispell Regional Hospital, Kalispell
Kenai Community Library, Kenai
Kettleson Memorial Library, Sitka
King County Library System, Seattle
Kitsap Regional Library, Bremerton
Lakeland Village School, Medical Lake
Lewis and Clark Library, Helena
LEWIS-CLARK STATE COLLEGE, LEWISTON
Libby High School Library, Libby
Libby Junior High School, Libby
Library Association of Portland, Portland
Lincoln County Free Library, Libby
Lincoln County Senior High School, Eureka
Lower Columbia College, Longview
Lummi Education Center Library, Ferndale
Madigan Army Medical Center (U.S. Army), Tacoma
Maricopa County Library, Phoenix
Matanuska-Susitna Community College, Palmer
McNeil Island Correction Center, Steilacoom
Mid-Columbia Regional Library, Kennewick
Miles City Public Library, Miles City
Miles Community College, Miles City
Missoula City-County Library, Missoula
Mohave Community College, Kingman
Montana Census and Economic Information Center, Helena
Montana College of Mineral Science and Technology, Butte
Montana Historical Society, Helena
Montana Last Copy Fiction Depository, Billings
Montana Office of Public Instruction, Helena
Montana State Law Library, Helena
Montana State Library, Helena
Montana State University, Bozeman
NBBJ Group Library, Seattle
Naval Regional Medical Center (U.S. Navy), Bremerton
Naval Submarine Base-Bangor Library, Bremerton
North Central Regional Library, Wenatchee
North Olympic Library System, Port Angeles

LIBRARY

North Seattle Community College, Seattle
North Slope Borough School District, Barrow
Northern Montana College, Havre
Northern State Multi-Service Center, Sedro Wolley
Northwest Hospital, Seattle
NORTHWEST NAZARENE COLLEGE, NAMPA
Olympia Technical Community College--See South Puget Sound Community College
Olympic Center, Bremerton--Send requests for materials to Rainier School Library, Buckley
Olympic College, Bremerton
Overlake Hospital, Bellevue
Pacific Lutheran University, Parkland
Pacific Medical Center, Seattle
Parmly Billings Library, Billings
Perkins, Coie, Stone, Olsen and Williams, Seattle
Phillips County Library, Malta
Pierce County Library, Tacoma
Portland Community College, Portland
Portland State University, Portland
Prescott College Library, Prescott
Providence Hospital, Everett
Providence Medical Center, Seattle
Puget Sound Health Systems Agency, Seattle
Puget sound Power and Light Co., Bellevue
Purdy Treatment Center for Women, Gig Harbor
Rainier School-Library, Buckley
Reed College, Portland
Richland Public Library, Richland
Rocky Mountain college Library, Billings
Rocky Mountain Laboratory (U.S. National Institute of Health), Hamilton
Sacred Heart Medical Center, Spokane
St. Elizabeth Hospital, Yakima
St. Joseph Hospital, Tacoma
St. Lukes Hospital, Bellingham
St. Martin's College, Olympia (Lacey)
St. Michael's Institute Library, Spokane
St. Patrick Hospital, Missoula
St. Peter Hospital, Missoula
St. Peter's Hospital, Helena
St. Vincent's Hospital, Billings
Schick Shadel Hospital, Seattle
Seattle Central Community College, Seattle
Seattle Community College Deistrict, Seattle
Seattle Pacific University, Seattle
Seattle Public Library, Seattle
Seattle University, Seattle
Seattle West Medical Center, Seattle
Shodair Children's Hospital, Helena

LIBRARY

Shoreline Community College, Seattle
Sitka School District, Sitka
Skagit Valley College, Mt. Vernon
Sno-Isle Regional Library, Marysville
South Puget Sound Community College, Olympia
South Seattle Community College, Seattle
Southwest Washington Hospitals, Vancouver
Spokane Community College, Spokane
Spokane County Medical Society, Spokane
Spokane County Library System, Spokane
Spokane Falls Community College, Spokane
Spokane Public Library, Spokane
Stevens Memorial Hospital, Edmonds
Swedish Hospital Medical Center, Seattle
Tacoma Community college, Tacoma
Tacoma Public Library, Tacoma
Timberland Regional Library, Olympia
Troy Senior High School, Troy
UAITC/CIT/Audio Visual Services, Anchorage
United States Veterans Administration Center, Fort Harrison
United States Veterans Administratio Hospital, Seattle
United States Veterans Administration Hospital, Spokane
United States Veterans Administration Hospital, Tacoma
(American Lake)
United States Veterans Administration Hospital, Vancouver
United States Veterans Administration Hospital, Walla Walla
University of Alaska, Anchorage
University of Alaska, Fairbanks
University of Alaska, Fairbanks-Bio-Medical Library
University of Alaska, Juneau
UNIVERSITY OF IDAHO, MOSCOW
UNIVERSITY OF IDAHO LAW LIBRARY, MOSCOW
University of Montana, Missoula
University of Puget Sound-Law Library, Tacoma
University of Washington, East Asian Library, Seattle
University of Washington, Forestry Library, Seattle
University of Washington, Law Library, Seattle
University of Washington, Seattle
Valdez Consortium Library, Valdez
Valley General Hospital, Renton
Vancouver Public Library, Vancouver, British Columbia
Virginia Mason Hospital, Seattle
Walla Walla College, College Place
Walla Walla Community college, Walla Walla
Washington Correction Center-Resident Library, Shelton
Washington Correction Center-Staff Library, Shelton
Washington Soldiars' Home-Resident Library, Orting
Washington Soldiers' Home-Staff Library, Orting
Washington State Department of Labor and Industries, Olympia
Washington State Deaprtment of Transportation, Olympia

LIBRARY

Washington State Energy Office, Olympia
Washington State Film Library, Olympia
Washington State Law Library, Olympia
Washington State Library, Ecology Department, Olympia
Washington State Library, Olympia
Washington State Penitentiary, Walla Walla
Washington State Reformatory, Monroe
Washington State School for the Blind, Vancouver
Washington State School for the Deaf, Vancouver
Washington State University, Pullman
Washington Veterans Home Library, Retsil
Wenatchee Valley College, Wenatchee
Western Montana Clinic, Missoula
Western Montana College Dillon
Western State Hospital, Library, Tacoma
Weyerhaeuser Corporate Library, Tacoma
Whatcom Community College, Bellingham
Whatcom County Library, Bellingham
Whitefish Senior High School, Whitefish
Whitman College, Walla Walla
Whitworth College, Spokane
Yakima Valley Memorial Hospital, Yakima
Yakima Valley School, Selah
Yavapai College, Prescott